MADRAS GOVERNMENT MUSEUM

CENTENARY SOUVENIR

(1851 - 1951)

Published by :
The Principal Commissioner of Museums
Government Museum
Chennai-8
1999

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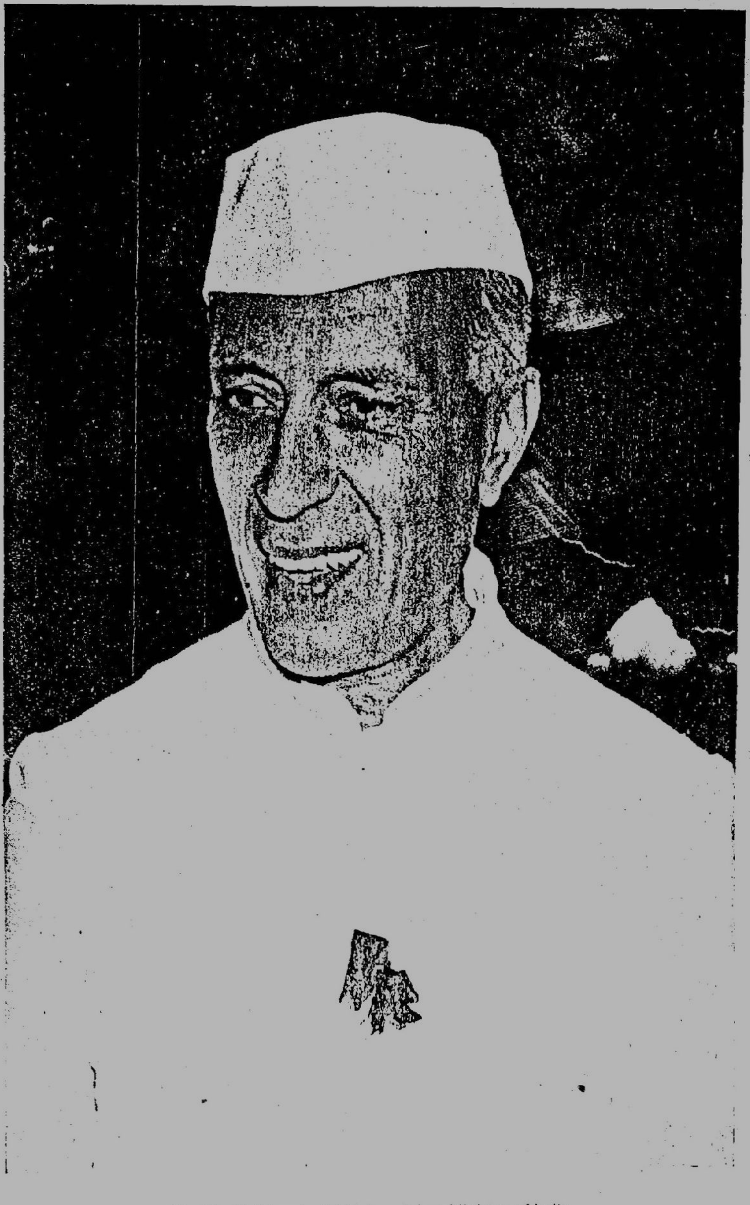

Hon'ble Shri Jawaharlal Nehru, Prime Minister of India

S. RANGAMANI, I.A.S.
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Chennai - 600 008.

PREFACE

In 1951, the Chennai Government Museum celebrated its Centenary Year in a grand manner. The then Prime Minister of India Pandit Jawaharlal Nehru dedicated the National Art Gallery - new addition to the Museum complex, to the people. A special Centenary Exhibition had been arranged to add festive mood to the occasion. For the academic oriented people a Centenary Souvenir had been brought out as to mark the Museum's historic event. The souvenir with pregnant articles and messages of eminent personalities became a feast to people interested in culture and in Chennai Museum especially in its growth and development.

We feel elated to reprint the Centenary Souvenir, an authentic document on the origin and development of this Museum.

Chennai - 8.

24.02.1999

(S. Rangamani, I.A.S.)

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PART I

INTRODUCTORY

This part contains details of the programme of the Centenary celebration, greetings from friends of the Museum, an account of the inauguration function, and the full text of the speeches of the Hon'ble Shri Jawaharlal Nehru, His Excellency the Governor of Madras, the Chief Minister and the Minister for Education, Madras State

INTRODUCTION

IT WAS IN January 1851 that the Court of Directors of the East India Company accepted the offer of Surgeon Edward Green Balfour to be the Honorary Officer-in-charge of the Madras Central Museum, though their actual approval of the suggestion made by the Madras Literary Society for the formation of a Museum at Madras goes back to the year 1846. Dr. Balfour began his work of arranging the geological collections of the Madras Literary Society towards the end of 1850, but the real beginning of the Museum was in 1851 with the appointment of Dr. Balfour as its organizer. We have therefore taken the year 1851 as the year of inception of the Museum though an earlier date such as 1846 can also be considered as the initial year.

Though there is little room for ceremonial and sentiment in a museum completing a century of its existence, yet with the object of utilizing the occasion to focus public attention on the Museum and to harness popular support for its future development, it was proposed that the Centenary of the Museum should be celebrated in a fitting manner. When the proposal was broached by me to the Hon'ble Sri K. Madhava Menon, Minister for Education, he reacted to it with great enthusiasm. The Government decided

to invite the Hon'ble Shri Jawaharlal Nehru, Prime Minister of India, to inaugurate the Centenary celebration. We are very happy indeed that he has been able to accept the invitation of the Madras Government and participate in the Centenary functions. The Madras Museum is the second in India from the point of age and the first Museum in Independent India to stage a Centenary celebration. The enthusiasm and interest evinced both by the Government and the people of this country in our Centenary celebrations can be taken as an indication that, in future, museums of India will not languish for want of Governmental and popular support.

As His Excellency Dr. S. Radhakrishnan has pointed out in his message to us, this Museum has been built up chiefly by the labours of a number of very able English public servants. The duty not only of safeguarding the existing collections but also of building up and expanding our museums has fallen now on Indian shoulders. Before India became independent, museums in this country enjoyed certain advantages by being associated, though in a loose manner, with the museums of the vast British Empire. The British officers who manned Indian museums had close ties with museums abroad, and during furloughs, they could easily renew personal contacts with museum workers in Europe and also study the progress made by them. Absence of such facilities for contacts with progressive museums abroad is a handicap which perhaps has already begun to affect the museums of India. Even within India, with its great distances separating museum workers from one another, the evils of isolation resulting from the poor organization of the museum profession are a potential danger. In this situation, UNESCO has come in as a most helpful agent and we hope the museums of India will benefit immensely by active participation in UNESCO programmes for the betterment of museums. I am happy to record that the officers of the Museums and Monuments Division of UNESCO, headed by Dr. J. K. van der Haagen, are watching our progress with keen

interest and giving us all the encouragement they can from their Paris office. Occasions, such as the one we are now celebrating, help not only the workers in museums but also the leaders of the country to take stock of the position of our museums and devise remedies for existing defects and think of plans for future progress.

We are celebrating the Centenary by (*a*) opening to the public the new National Art Gallery of Madras, (*b*) holding a special Centenary exhibition, (*c*) instituting the Sundara Raj Prize and (*d*) arranging a series of eight Centenary lectures and film shows.

The Government were also pleased to sanction a bonus of Rs. 15 to each of the peons and Rs. 10 to each of the gardeners, sweepers and watchmen of the Museum.

THE NATIONAL ART GALLERY OF MADRAS

As Dr. Cousins has shown in his article " Art in Madras Museum " in Part V of this Souvenir Volume, the Madras Museum has been interesting itself in fine arts from its early years. When Edgar Thurston was the Superintendent of the Museum, he used to purchase paintings at the exhibitions conducted by the Madras Fine Arts Society. The Museum, thus, had the beginnings of an art section sixty years ago, and art objects other than paintings have also been vigorously collected. But, then, an art gallery, freed from its association with crafts, history, religion and sentiment, by which I mean a gallery of pure art, was neither thought of nor planned. After Thurston's retirement, purchases of modern paintings were extremely rare.

In 1945, a departmental committee consisting of officials and non-officials with Mr. C. O. Coorey, I.C.S., Deputy Secretary, Education Department, as the Chairman, was appointed by the

Government to suggest improvements to the Madras Museum. This Committee made the following recommendations with reference to the art section:—

"The Committee is of opinion that the time has come for the creation of a picture gallery worthy of the metropolis of the Madras Province, illustrating the various phases of Indian painting, ancient and modern, together with examples of allied schools of Persia, Tibet, China and Japan.

The Committee considers that the Victoria Technical Institute Building on the Pantheon Road is eminently suitable for being used as an Art Gallery."

No definite move was made for the creation of an Art Gallery as such, till May 1951, when the Government decided to open an art gallery and proposed to take the Victoria Memorial Hall on lease for locating it. The name "National Art Gallery of Madras" was suggested by His Highness the Maharaja of Bhavnagar, Governor of Madras. The Council of the Victoria Technical Institute, who are the owners of the Victoria Memorial Hall, were cordially co-operative in all our negotiations. The Government appointed a committee consisting of Sri K. M. Unnithan, I.C.S., Secretary to Government in the Education Department, as Chairman, and Dr. James H. Cousins, Sri D. P. Roy Chowdhury and Dr. A. Aiyappan as members to make the preliminary arrangements to open the National Art Gallery. The Museum had already got a collection of about 400 paintings from which 54 were selected by the Committee for the National Art Gallery. A small number of the best bronzes, metal-ware, wood-carvings, ivory and textiles from the Museum and a small series of paintings and textiles from the School of Arts and Crafts were transferred to the National Art Gallery: His Highness the Maharaja of Bhavnagar, Governor of Madras, issued a personal appeal to private owners of art collections for donations to the National Art Gallery. The response was generally satisfactory

but all the articles received could not be exhibited owing to several reasons including the lack of suitable space for display.

We have only made a beginning, with our small collection as the nucleus, of the National Art Gallery of Madras; there are pictures now in the Art Gallery which may have to be replaced when better ones are secured. Since our ultimate object in establishing the new institution is to raise public taste in the field of fine art, no effort will be spared to see that second-rate or spurious specimens of art do not get access to the National Art Gallery.

As the space available in the Victoria Memorial Hall is extremely limited, paintings, sculptures, etc., which illustrate the history of art in India will be given a place in a new art section of the Museum. Copies of well-known mural paintings from South Indian temples will also be prepared, in due course, and added to the new section in the Museum.

CENTENARY SPECIAL EXHIBITION

The object of the Centenary Exhibition is to demonstrate, on a small scale, but in as concrete a manner as possible, two very important ideas, namely, how wonderful are the creative experiments of Nature and, how, in spite of its great diversity, Indian Culture has a common basic pattern. For want of suitable space, the Exhibition has been arranged in four different galleries, the Dancing Siva series in the New Extension, the archaeological, ethnological and historical series in the Goli Hall, the natural history and geology series in the old picture room, and the exhibits contributed by the British and American Information Services and the British Council, in the old lecture hall.

Zoology.—The zoological series is intended to serve as a spotlight on some of the more interesting and recently prepared

exhibits and photographs, particularly those illustrating techniques of preparing museum exhibits. It comprises the following series :—

(1) *Animals from distant lands.*—In this group are brought together a few specimens of foreign fauna contained in the Zoological collections, such as the Kangaroo, the duck-billed platypus and the macaw and a series of beautiful coloured pictures showing habitat groups of various American and African animals and birds of the Pacific, acquired from the American Museum of Natural History, New York.

(2) *Evolution of the animal kingdom.*—The beginnings and evolutionary history of the Animal Kingdom are illustrated by a large-scale time chart and a model of the Tree of Evolution. A selected series of the various phyla of the Animal Kingdom are also exhibited as an introduction to the great range and diversity of form and structure met with among animals.

(3) *Wonder creatures of the sea.*—In this series are exhibited a selection of specimens representing some of the manifold marvels of marine life including a diorama depicting the fauna of a coral reef and other interesting examples of brightly coloured crabs, shells, starfishes and sea urchins.

(4) *Specimens illustrating ornamental and commercial uses of animal products.*—Various commercial products derived from animals are exhibited in this section. It also includes exhibits illustrating ornamental uses of shells and other animal products.

(5) *Animals in their natural haunts.*—A selected series of habitat groups of common South Indian reptiles and birds are exhibited including a few illuminated dioramas with painted landscape in the background, which represent one of our latest innovations in the field of museum display.

(6) "*Behind the Scenes*" *at the Museum.*—In order to give the visitors an idea of what goes on in the Zoological preparation rooms of the Museum a section has been devoted to

the exhibition of various specimens, models, and photographs illustrating stages in taxidermy, plaster-casting and other processes in museum technique.

(7) *Some zoological hobby collections.*—A group of exhibits comprising interesting hobby collections such as eggs and feathers of birds, shells, brightly coloured insects and Zoological curios have been specially prepared and mounted in order to encourage amateur naturalists to collect and preserve natural history specimens

(8) *Photographs of Indian breeds of cattle and poultry.*—A series of enlargements showing the various Indian breeds of cattle and poultry have been suitably framed and exhibited; these will eventually form permanent exhibits in the Zoological section.

Botany.—The subject of Botany is opened by a model and a sketch of a typical flower. This is followed by some specimens showing abnormal features in plants, and a giant toadstool. The interest roused by these queer objects is maintained by a group of insectivorous plants. The need, in these difficult days, to keep our food-stuffs properly covered and protected, is stressed by a model, and an explanatory chart of bread mould. The usefu ness of a knowledge of plant genetics is next illustrated. Economic Botany is also represented by such specimens as chinchweed (a foreign plant that could be naturalized here), fibres of jute and its substitutes, and cotton. The economics of rosewood and teakwood are explained in an interesting way.

Geology.—Geological exhibits commence with structural details of the earth, including the distribution of land and sea through the ages, and a collection of important minerals of South India, followed by a series of gem stones. Representation has been given to the mica-mining industry of the Madras State. A chemically-formed sulphur tree, minerals containing radio-active materials, two large crystals of rock-salt, and a crystal of doubly refracting calcite, are among other mineralogical exhibits. A small

collection of meteorites becomes interesting when it is learnt that it is of extra-terrestrial origin. Marble used for sculpture in the St. Mary's Church in Fort St. George, and a series of dressed and polished rocks used in the construction of the Maharajah's Palace, Mysore, are also of interest. The usually dull subject of Palaeontology is introduced through carefully selected material of animal and plant fossils and charts of prehistoric plants and animals. A model of the Lower Bhavani Valley is also exhibited.

Exhibits relating to the history of the Madras Museum.—(*a*) Portrait in oils of Edward Green Balfour and a photo enlargement of Dr. Bidie (*at the entrance*).

(*b*) A map of Madras City in 1798 before the Pantheon Buildings were built, showing the open park land of the Egmore village; photographs of the officers-in-charge of the Museum from 1851 onwards.

(*c*) The *Fort St. George Gazette*, dated April 29, 1851, containing the first announcement regarding the Museum at the College, Madras.

(*d*) Palm-leaf with embossed head of Queen Victoria, and spec mens of Malayalam, Ṭamil and Telugu printing at the per od when the Museum was founded.

(*e*) The key used for the opening ceremony of the new Museum and Library buildings in 1896 showing an engraved p cture of the buildings with a very tall tower which collapsed later.

(*f*) A volume containing the early administration reports and some of the early publications of the Museum.

(*g*) Volumes I to V of Surgeon Balfour's "Cyclopaedia of India". This ranks high among the most important of the publications of Surgeon Balfour, the first officer-in-charge of the Museum.

(*h*) Records of interest such as (1) the first letter book of the Museum (1851–52); (2) the letter book of 1853 containing Balfour's

letter to His Highness the Rajah of Callistry (Kalahasti) on the importance of exploiting minerals; (3) a letter relating to the establishment of the Zoological Gardens at the Museum; (4) the letter book o' 1855 containing a reference to the District Museums at Ootacamund, Mangalore, Cuddalore and Bellary; (5) the letter book of 1856 containing a notification regarding the Zoological Gardens; (6) the letter book of 1872-73 containing Colonel Bidie's report on Cinchona cultivation; (7) the letter book of 1880 containing a letter to His Highness the Maharajah of Travancore regarding pyrites and a gold token; (8) the letter book of 1882 containing suggestions to the Government of Travancore regarding paper manufacture; (9) Government Order recording appreciation of the international recognition gained by the Museum Taxidermist, Mr. Anthony Pillai; and (10) publications issued by the Museum from 1851 to 1909 (*in the Goli Hall*).

Dancing Siva bronzes.—The Madras Museum has a unique series of bronzes of Siva as Dancer. A selection of the best of these and a rare bronze showing Siva dancing in the *chatura* (square) pose, along with photographs of well-known dancing Siva bronzes in South Indian temples, and of sculptures in Western Indian cave temples are exhibited in the New Extension.

Copies of mural paintings.—An actual size copy of a Pallava mural painting from the Siva temple at Panamalai in the South Arcot district and copies of the murals of Ajanta, Bagh and Sigiriya are on exhibition. The copy of the Panamalai mural is of special interest to us, as the original belongs to about 700 A.D., and marks an important stage in the development of wall painting in South India.

Anthropological Series.—This consists of (*a*) specimens of stone age tools from all parts of the world. The Museum has a rich collection of stone age implements of the prehistoric inhabitants of Africa, China, Egypt, England, France, United States of America, Malaya and Java; (*b*) plastercasts and photographs of the principal

fossil types of man such as the Ape Man of Java, the Ape Man of Peking, the Piltdown Woman of England and the Mousterian Man of France; (c) ethnographic collections (lent by Dr. B. S. Guha, Director, Department of Anthropology) illustrating the material culture of the Abors, a Mongoloid tribe of Assam.

Life of Sri Sankaracharya.—Very little about the life of Sri Sankaracharya, one of the greatest of Indian philosophers, is known to the average visitor to the Museum. An effort is made here to introduce the philosopher to the common man. A plastercast of the image of Sri Sankaracharya in the Tiruvottiyur temple near Madras, paintings illustrating the traditionally well known incidents in the great teacher's life, and drawings of temples and ascetic institutions founded by him, and a complete set of his works form what we believe to be a unique and instructive series. The paintings and drawings were kindly prepared for us by Sri R. Mahadevan on the command of His Holiness Sri Sankaracharya of Kanchi Kamakoti Peetam.

Copper-plate grants.—Copper-plate charters of South Indian royal dynasties with their emblems and scripts of the different periods to which they belonged.

Relic caskets, etc., from Bhattiprolu.—Crystal relic caskets from the Buddhist stupa at Bhattiprolu which contained a fragment of the bone of the Buddha, gold flowers, gems, etc., deposited with the relic.

Sculptures and bronzes—

(1) A sandstone fragment of the Mauryan period representing a goose.

(2) Sunga sculpture from the Bharhut stupa, with a representation of the wheel of law.

(3) Ganesa sculpture of the Gupta period.

(4) Avalokiteswara, from Sarnath.

(5) Metal image of Vishnu of the Pala period in Bengal.

(6) Metal image of Manasa Devi, from Bengal.

(7) Stone sculpture showing Umamaheswara, from Bengal.

(8) Stone sculpture representing a Nagini, from Orissa.

(9) Metal image of Siva carrying Sati, from Trivandrum.

(10) Tripurari, Tripurasundari and Tripurasura, sculptures in stone, from Pudukkottai.

(11) Plastercast of a sculpture representing Kalarimurti, from Pudukkottai.

Numismatics.—The exhibition contains a selection of South Indian coins from our coin cabinets—

(1) The following dynasties and types are represented:—(*a*) Cholas, (*b*) Eastern Chalukyas, (*c*) Western Chalukyas, (*d*) Hoysalas, (*e*) Kakatiyas, (*f*) Mysore Odayars, (*g*) South Indian Panams, (*h*) Travancore, (*i*) Vijayanagar, (*j*) Mysore Sultans (*k*) Cochin, (*l*) Pandya, (*m*) Kerala and (*n*) East India Company.

(2) A set of Roman coins and jewellery, and a set of Indo-British medals, are exhibited separately.

Exhibits contributed by the British Council, United States Information Service and British Information Service.—The Madras branch of the British Council, the United States Information Service and the British Information Service exhibit photographs of museums and cultural activities of Britain and the United States of America.

Demonstration of bronze-casting and stone-carving.—A *silpi* (sculptor in the traditional style), by name, Sri Panchakshara Asari, whose ancestors have planned and built several temples in South India and even in North India, demonstrates (in a porch behind the Goli Hall) the processes and methods which have been described in Sanskrit works on applied art. He also gives a demonstration of bronze-casting by the lost-wax method.

Sri Panchakshara Asari's ancestors belonged to Tiruchirappalli but migrated to Madras and later to the Telugu districts. On the invitation of the Raja of Karvetnagar in North Arcot district, his grandfather settled down in the town of Karvetnagar and built the temples there.

THE CENTENARY ESSAY COMPETITION

Government accepted the donation of Rs. 100 made by Dr. B. Sundara Raj, retired Director of Fisheries and a former Curator for Zoology in the Museum, the interest of which is to be utilized every two years for a prize in the form of a medal or a book for the best essay by the students of the VI Form classes of this State. The essay competition will be held once in two years beginning from 1953 (G.O. Ms. No. 2653, Education, dated 5th October 1951). The prize will be known as the Dr. B. Sundara Raj Prize. We are thankful to Dr. Sundara Raj for his happy idea and his generosity.

CENTENARY LECTURES

We are very happy indeed that some of the most distinguished scientists and scholars of this country have accepted our invitation to deliver the centenary lectures. The following are the series of lectures :—

	Lecturer.	*Subject.*
1	Sri T. N. Ramachandran, Superintendent, Department of Archaeology, Eastern Circle, 32, Chittaranjan Avenue, Calcutta.	Museums of the United Kingdom and India.
2	Dr. B. S. Guha, Director, Department of Anthropology, Indian Museum, Calcutta.	The Place of Tribal Population in New India.
3	Dr. V. S. Agrawala, Professor of Indian History, Benares Hindu University, Benares.	North Indian Painting.

4	Dr. N. K. Panikkar, Chief Research Officer, Central Marine Fisheries Research Station, Mandapam Camp P.O.	Fisheries Resear and Museums.
5	Sri G. Venkatachalam, Art Critic and Author, Percy's Hotel, Secunderabad.	Two Thousand Years of Indian Painting.
6	Prof. A. Anantanarayana Ayer, Principal, Stanley Medical College.	The Problem of the Pedigree of Man.
7	Dr. T. S. Sadasivan, Director, Botany Laboratory, University of Madras.	Some Aspects of Soil-borne Diseases of Crop Plants.
8	Sir S. V. Ramamurty, I.C.S. (retired).	Indian Sculpture and Culture.

LOOKING AHEAD

When Edward Green Balfour left the Madras Museum, it suffered a severe loss. None of his successors had his encyclopaedic mind or limitless enthusiasm; cold economic considerations made them limit the field of their activities. When I look at the future, Balfour's spirit seems to ask me to plan ambitiously. Whether, at the second centenary of the Museum in 2051 A.D., my successors would consider my objectives too moderate or too ambitious, I cannot, of course, guess, but instead of doing today's work and slogging on to a kind of clumsy success, it is best to plan ahead and work one's way up to a target. The following are some of the plans for the museums in this State which I have in mind :—

(1) *A museum in every school.*—For this, we have already done the spade-work in co-operation with the Department of

Education, through our training course for teachers in museum technique and through our scheme of gifts to schools.

(2) *A local museum in every municipal town.*—At present, the Madras Museum has only one branch museum, namely, that at Pudukkottai. Balfour tried hard and had six local museums started, but his efforts failed, ostensibly for want of local interest, though my own explanation is that there was no man of Balfour's calibre at the Central Museum at Madras to create local enthusiasm. As matters stand at present, the prospects of our larger towns organizing museums of their own appear to be quite bright.

(3) *A travelling museum that would reach the villages.*—In the campaign against illiteracy, libraries and educational films have now been put on wheels and reach a good number of our villages. We hope we would be able to add a museum unit to these adult education agencies.

(4) *Guide service for all visitors.*—We have found by actual observation that the majority of the visitors to the Museum appreciate the help of competent guides. At present, we have only a small staff for this most essential service and to some extent we have secured the services of the scouts of the City to help the illiterate visitors to the Museum. Other forms of guide service will be considered and adopted, so that a visit to the Museum becomes worth-while to the public.

(5) *Campaign for non-official support.*—With a body of five Honorary Correspondents of the Museum in each of the 26 districts of the State, we have now 130 semi-official helpers. The idea of having Honorary Correspondents for the Museum is a new one but we have no doubt that the experiment will prove profitable. Other classes of non-official helpers will also be associated with the work of the Museum so that, in the course of the next few years, the Museum will be regarded not as one of the many show places, but a cherished treasure-house.

(6) *A children's section to be added to the Museum.*—We have done nothing so far for the children visiting the Museum on the lines of what the museums of the United States of America have been doing for American children. Our children have yet to get their *swaraj* from the grown-ups. Already we have got children's libraries in the City and rough plans have been drawn up for a children's section in this Museum.

(7) *A museum of science.*—During the initial years of the Museum, Dr. Balfour, Captain Mitchell and Dr. Bidie collected models of machinery, etc., of which the Museum came to have a fairly large number, but Dr. Thurston discontinued this section of mechanical appliances. In India of the present, a science museum is a desideratum and we shall explore the possibilities of starting one at Madras.

(8) "*Holistic*" *exhibition in the galleries.*—In the historical and ethnological sections of the Museum, epochs of our culture are illustrated by sculptures, epigraphs, coins and architectural pieces but several other important aspects remain yet to be illustrated. Attempts will be made to illustrate each epoch on the holistic plan which some of the most forward museums of Europe have successfully tried.

(9) *More popular publications.*—The *Bulletin* and *Guide* series of our publications have been well received in the past by our colleagues in India and abroad. We are indeed happy that our English and Indonesian friends have made special reference to our publications in the greetings which they have sent us. We propose to publish more popular guides not only in English but also in the Indian languages. The latter will be more easily possible when we have completed our plan of labelling exhibits in the Indian languages.

The publication of an annual or half-yearly Miscellany on the lines of the *British Museum Quarterly*, containing articles and notes on our newer accessions and current activities, is also under consideration.

(10) *Bringing the working classes and the Museum together.*—In future, we hope to carry the Museum to the workmen's clubs in factories and other large concerns and also to bring them in larger numbers to the Museum by arrangement with workers' unions. Museums in the past had their appeal directed to the upper and middle classes, but this can no longer be the case under altered conditions in India. For this purpose we may have to keep the Museum open for longer hours in the evenings. As a preliminary to this, several galleries of the Museum have now got electric lighting, and others, we hope, will have it in the near future.

(11) *More special exhibitions, film shows, lectures and hobby clubs at the Museum.*—As I have said in my historical account of the Museum, special exhibitions have helped to keep the Museum in the news and bring to it large numbers of visitors. We have already got a film projector and two good lecture theatres, one for large gatherings and the other for small groups, so that film shows can now be easily arranged. Organization of public lectures has to be done on new lines. Hobby clubs are a new feature, on which we have done nothing so far, but spade-work by way of collecting information from the United States of America will be undertaken as early as possible.

Museums of Europe were the outcome of a process of democratization of education, arts and culture. Though our museums were of exotic introduction, they have come to stay in India, and are sure to thrive here as democracy gets more and more firmly established on our soil. After my survey of the history of the Madras Museum for the last hundred years, feelings of optimism and faith in man's capacity for progress are uppermost in my mind, as we stand at the end of the passing of an old epoch and the threshold of a new century. The Museum which Edward Green Balfour and his staff of five men started in the dilapidated rooms of the Old College has certainly grown; its staff has multiplied about twenty times and its budget a hundred and fifty times! The Madras Zoo,

the Aquarium, the Connemara Public Library, the University Library and the Herbarium of the Agricultural College at Coimbatore, had the Museum as their parent body and they separated from it on attaining their majority. For long, the Museum was the only place at which the public of Madras of all classes could find education, relaxation and intellectual enjoyment, free of cost, provided for them by the State. We, of the Museum, as servants of the State, now re-dedicate ourselves to the noble task begun so well by Edward Green Balfour.

GOVERNMENT MUSEUM, MADRAS-8,
November 27, 1951.

A. AIYAPPAN,
Superintendent.

ACKNOWLEDGMENTS

The number of friends of the Museum who have helped us in the Centenary celebration is indeed large. I wish to record here my grateful thanks to Dr. B. S. Baliga, Curator, Madras Record Office, for the loan of a map, publications, etc., and for help in the preparation of the history of the Museum ; to Sri Jagatguru Sri Kanchi Kamakoti Peetadhipati Sri Sankaracharya Swamigal, Sri R. Mahadevan, Editor, *Anandavikatan*, Sri K. Chandrasekharan, Advocate, and Swami Agamananda, Ramakrishna Adwaita Ashrama, Kaladi, for their valuable contributions to the exhibition about the life of Sri Sankaracharya ; to Dr. B. S. Guha, Director, Department of Anthropology, Mr. C. Sivaramamurthi, Superintendent, Archaeological Section, Indian Museum, the Trustees of the Indian Museum, the Curators of the Trivandrum Museum and of the Asutosh Museum, Calcutta, the Trustees of the Tiruvottiyur Siva Temple, Sri S. V. Ramamurti, Prof. J. Sundara Rao, Prof. J. P. Joshua, Sir K. T. Joseph, Sri P. I. Chacko, the Chief Engineer for Irrigation, the Madras Branch of the Geological Survey of India, and the Professor of Geology, Presidency College, for loans of exhibits for our Centenary exhibition ; to Mr. V. D. Govindaraj, Artist, for the cover design of the Souvenir volume which he prepared under the supervision of Mr. D. P. Roy Chowdhury ; to the officers of Public Works Department, namely, Sri T. S. Venkatarama Ayyar, Chief Engineer, Mr. J. F. T. Rozario, Electrical Engineer, Sri T. S. Padmanabha Ayyar, Executive Engineer, and their able assistants ; to Sri C. P. Gopalan Nair, Superintendent, Sri M. R. Srinivasan, Deputy Superintendent and the staff of the Government Press, Madras, for the excellent printing of the Centenary Souvenir ; and to His Excellency Sardar K. M. Panikkar, Dr. M. S. Krishnan, Dr. B. S. Guha, Dr. F. H. Gravely, Dr. S. Paramasivan, Dr. B. Sundara Raj, Sri S. N. Chandrasekar and Dr. James H. Cousins, for their contributions to the Souvenir volume.

To the following donors to our art collections, I wish to record my deep sense of gratitude: The Raja of Karvetnagar, Sree Ramakrishna Deo, Maharaja of Jeypore, Sri P. C. Veera Rayan Raja, Chalapuram, Sri D. Chandrasekharan, No. 22, Swami Naicken Street, Chintadripet, Mir Gulam Ali, Nawab of Banganapalle, Sri-La-Sri Subramania Pandara Sannadhi Avargal, Adhinakarthar, Thiruvaduthurai Mutt, Tanjore district, Sir S. V. Ramamurty, Dr. Sir Rm. Alagappa Chettiar, Sri Durga Prasada Deo, Kurupam, Sri Madireddi Veeraswami Naidu, Zamindar of Neelipudi, Masulipatam, the Maharaja of Pithapuram, Sri M. A. Chidambaram, Chettinad House, Adyar, the Valia Thampuratti Avargal, Kizhakke Kovilakam, Kottakkal, the Zamindar of Viyyur and Sri K. T. Kunhi Kammaran Nambiar, Coodali.

My scientific staff of Curators, Assistant Curators, Taxidermists, Photographer and Attenders have each made his contribution to the success of the Centenary celebrations. Mr. Thomas Sathyamurthy, Curator for Zoology, was in special charge of the Centenary exhibition and Mr. P. R. Srinivasan similarly of the arrangements of the National Art Gallery. I am glad to place on record my appreciation of their industry and energy in executing their difficult tasks. My office staff, and particularly Sri V. Damodara Menon, Office Assistant, had the heavy burden of attending to the very voluminous correspondence relating to the National Art Gallery and the Centenary celebrations. I feel most thankful to all the members of my staff, both technical and ministerial, for the enthusiastic and loyal manner in which all of them worked for the common purpose of making the celebrations successful.

I salute those unknown workers of the Museum, the early generations of the Indian staff of the Museum, of whom very little information, except the mere mention of names, is available in the Museum records. Even of the distinguished taxidermist, Sri Anthony Pillay, I have not been able to gather any personal details. I have had the privilege, however, of personally knowing the late Diwan Bahadur K. Rangachari who was the first Indian to hold a scientific post in the Museum, and his successors, the late Sri T. Narasinga Rao and Sri P. V. Mayuranathan. The late

Sri R. Srinivasa Raghava Iyengar, the first Archaeological Assistant of the Museum, died in harness in 1930. Other Indian scientific men who worked in and built up the Museum, fortunately still in our midst, are Dr. B. Sundara Raj, Prof. M. O. Parthasarathi Iyengar, Sri S. N. Chandrasekaran, Sri Chennappaiya, Sri T. N. Ramachandran, Sri C. Sivaramamurthi, Sri K. S. Srinivasan, Srimati C. K. Ratnavati and Sri A. Ramakrishna Reddi. To these friends, several of whom were my colleagues, I wish to pay my tribute of grateful thanks on the happy occasion of the Centenary of the Museum.

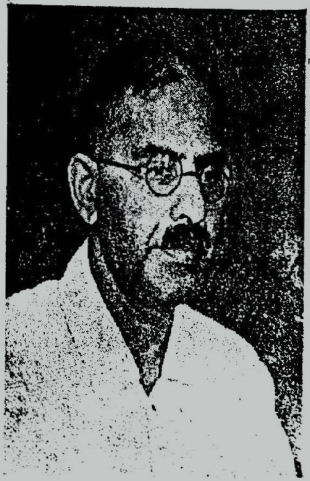
There is now in England a family—the Gravelys—whose thoughts will be with us now. Dr. Gravely, while he was Superintendent of this Museum, did so much for it and also for this State, for which, as a member of the noble group of English quakers, he did not expect any expression of thanks. Madras is silently grateful to him for the great tasks which he executed with the utmost conscientiousness.

I have reserved to the very last my words of thanks to Sri K. M. Unnithan, I.C.S., Secretary to Government, Education Department. In his dual capacity as Chairman of the National Art Gallery Committee and head of the Museum at the Secretariat level, he took the keenest personal interest in the daily progress of our work. He has been an ideal chairman at the meetings of the National Art Gallery Committee and several of his suggestions have been incorporated in the arrangements that the public will see in the National Art Gallery. The members of the staff of the Museum are thankful indeed to him for the guidance, encouragement and help he has given us. Sri D. P. Roy Chowdhury and Dr. James H. Cousins, other members of the Committee, have also placed at our disposal their vast experience of art, for which we are most grateful to them.

A.A.

His Excellency Shri Sir Krishna Kumarsinhji Bhavsinhji, K.C.S.I.
Governor of Madras

Hon'ble Sri P. S. Kumaraswami Raja
Chief Minister, Madras State



Hon'ble Sri K. Madhava Menon
Minister for Education and Law, Madras State

GOVERNMENT HOUSE,
OOTACAMUND,
5th September 1951.

I am happy to be associated with the Centenary Celebration of the Madras Government Museum. My thoughts naturally go back to the days of the East India Company when Sir Henry Pottinger, Governor of Fort St. George, obtained the sanction of the Court of Directors of the Company to accept the offer made by the Madras Literary Society of its small geological collections as the nucleus of a Central Museum at the Presidency. This happened in 1849 and it is refreshing to learn that the idea of a Museum at Madras came from a private group among whom were Heyne, Voysey, Christie, Malcolmson, Benza, Kaye and Newbold who organized themselves into the Madras Literary Society and Auxiliary of the Royal Asiatic Society. The scientific and antiquarian activities of this organization have been taken over by several younger institutions, but the Madras Literary Society is still doing useful service through its excellent library. The European and Indian Community of the Presidency responded with enthusiasm to the appeal for donations for the Museum issued by the Government of the day. The Governors who followed Sir Henry Pottinger, Lord Harris, the Duke of Buckingham and Chandos, and Lord Connemara, took a personal interest in the Museum and some of the outstanding exhibits now in the Museum, such as the Amaravati sculptures and the sculpture of an elephant from Hampi were obtained for the Museum on the initiative taken by them. This interest and pride in the Museum were sustained till the beginning of the

present century as the official sponsors of the Museum and the public both thought they were doing something which was worth their time and energy and for which posterity would be grateful to them. In fact, the value of the scientific and cultural objects carefully collected, preserved and displayed in a Museum appreciates with the passage of time. As an instrument of popular education, the value of Museums is indeed very great. If a foreign Government and their officers valued our art and antiquities in such a great measure, how much more should be the attention and care, which we, to whom they belong as our birth-right, should bestow on them and the public institution in which they are treasured ?

I am happy to observe in our State, as in other regions of India, a growing interest in institutions which have as their object the advancement of our culture. The Government of Madras are giving their Museum their careful attention and are putting forth their best efforts to ensure its development on all sides, the latest being the National Art Gallery. While thanking the citizens of the Madras State for the support they have given the Museum in the past, I would request them, on the happy occasion of its Centenary, to give it further assistance. It is not for me to suggest here the nature and details of such assistance but I would only point out the example of the great American Museums established by private philanthropy. The Madras Museum is a Government institution—in fact it was the very first Government Museum to be started in India—but its future lies in the popular support which, I trust, it would receive from the public.

There is a close relation between art, science and crafts. Art thrives where crafts and skill have developed, for art includes control over material and technique. Our ancestors were able to build great temples and carve exquisite sculptures, because they had developed not only the taste and feeling but

also the skill to give form to them. If we are backward today in the fine arts, it is because we have not adequately nurtured our innate capacity for its concomitant techniques. This is the moral that a survey of the collections in the Museum brings to my mind. The further development of the Museum indirectly depends, therefore, on our capacity for steady progress in all avenues of our individual and national life.

While gratefully acknowledging the great and patient labours of the public servants who, in the past hundred years, built up the Museum and raised it to its present high status among the Museums of Asia, I congratulate the present staff of the Museum on the good work they have been doing and wish the Museum success in all its activities.

KRISHNA KUMARSINHJI,
Governor of Madras.

CAMP : MADRAS,
July 2, 1951.

I am glad the Prime Minister is presiding at the centenary meeting of the Madras Museum. My best wishes to those who are celebrating the Jubilee with just pride. Every branch of public administration in the South has a tradition of great efficiency which I hope the present generation of public servants will strive to maintain with pride and energy.

C. RAJAGOPALACHARI,
Home Minister, Government of India.

FORT ST. GEORGE,
MADRAS,
2nd August 1951.

The completion by the Madras Government Museum of a century of its useful existence, is a happy event, deserving to be celebrated in a manner befitting the age and importance of the Museum. A springhead of knowledge that it is, taking the visitors into the mysteries of nature and into the picture of architectural, sculptural and cultural greatness of the past, and also into the distant ages in our history and civilization, the Madras Museum stands today as one of the best equipped Museums in our land, giving a fund of materials to scholars and students of research. With its collections of rare exhibits, which are perennially on the increase, the Museum is becoming more and more attractive and popular. I am sure that its usefulness will grow with the march of time, enhancing its status and importance.

P. S. KUMARASWAMI RAJA,
Chief Minister of Madras.

CAMP: TRICHUR,
5th August 1951.

The Madras Government Museum is one of our National treasures we can justly feel proud of. I am glad its centenary is being celebrated this year. A well-preserved Museum serves as a link between the past and the present. It is very gratifying to note that our Museum has been preserved in the most careful and efficient manner possible and I take this opportunity to congratulate all those responsible for this. I hope the same interest will continue to be evinced in future also. I wish the centenary celebrations every success.

K. MADHAVA MENON,
Minister for Education and Law, Madras.

DI. CLIVE BUILDINGS,
CALCUTTA-1,
July 5, 1951.

I am happy to learn that the Madras Government Museum having completed the first hundred years of its life will celebrate the happy occasion in a manner befitting the role that the Museum has played in the life of the City and indeed of the Province.

The Government Museum has been a perennial source of attraction to many of the citizens of the State and to this day particularly on certain occasions like the day following the Vaikunta Ekadasi many thousands have thronged to the Museum to see and profit by a study of the various things displayed there. Its educative value even with its limited financial resources has been very great. Knowing the part that some Museums play in the school and college life of students of various countries and in educating the adult population, I sincerely hope that the beginning of the second century of its life will be marked by even greater interest taken both by the Government and the public in this Museum, that its galleries will be more full of exhibits and that visitors will be taken round the Museum by scholars who can explain the nature of the exhibits.

A galaxy of eminent men have successfully been the superintendents of this Museum. My recollection goes back over half a century when Dr. J. R. Henderson, Professor of the Christian College, was the Curator of the Museum.

In the interests of the public I wish the Museum and all those who are associated with its management an even brighter future than the past.

A. RAMASWAMI MUDALIAR.

भारतीय दूतावास, मास्को,
24th July 1951.

I am pleased to know that the Madras Government Museum will complete soon hundred years of its life. Many eminent Britishers were connected with it in the early days. They did their best to make it a useful institution. Now that we are ourselves in charge of it, I hope you and your colleagues would do your utmost to make the institution popular and helpful to the general community.

S. RADHAKRISHNAN,
Indian Ambassador, Moscow.

EMBASSY OF INDIA,
PEKING,
28th July 1951.

It is a matter of great satisfaction that the Madras Museum is celebrating its centenary this year. Among the Museums of India, it has a unique place, by the richness, variety and range of its collections. It is a monument to the continuity of civilization in South India, a store-house of rich, artistic and historic treasures, a shrine which gives inspiration to continued cultural activity. I have no doubt that in Independent India, the Madras Museum, with its extended activities, will play a notable part in our artistic and cultural revival.

K. M. PANIKKAR.

From Dr. Chauncey J. Hamlin, President, The International Council of Museums, Unesco House, Paris

I am happy to extend, on behalf of the International Council of Museums, our most cordial congratulations—to which I add my personal felicitations—on the occasion of the centenary of the Madras Government Museum.

It is my hope that this winter I may be able to visit your country and have the pleasure of visiting your Museum and greeting you personally.

The Buffalo Museum of Science, which I served for so many years as President of its Board of Managers, until my retirement in 1948, will reach its centenary just ten years from now in 1961 and, as President Emeritus of this Museum, I am privileged to convey to you also its most cordial congratulations.
May 4, 1951.

From Dr. Torres Bodet, Director General, UNESCO, Paris

Have great pleasure extending my warmest greetings and congratulations to Madras Government Museum on occasion of its centenary celebrations. UNESCO acclaims your efforts in the role of educational enlightenment.
October 11, 1951.

From Dr. S. D. Cleveland, President, The Museums Association, London

I have heard with considerable interest that the Madras Government Museum is about to celebrate its centenary.

May I offer you, on behalf of the Museums Association, congratulations on this proud and happy occasion, and good wishes both for the success of the excellent arrangements you have made to mark the event and of the future work of the Museum.
April 28, 1951.

From Dr. Laurence Vail Coleman, Director, The American Association of Museums, Washington, 25 D.C.

On the occasion of its hundredth anniversary, the Madras Government Museum has the highest greetings and the very best wishes of the American Association of Museums.

Your Museum is known to your American colleagues for its long and distinguished career, and the news of your centenary plans initiating further developments is convincing evidence of achievements still to come. May the actualities of the years ahead outrun the projects of today.

For yourself, accept please my own congratulations.

July 10, 1951.

From Dr. N. P. Chakravarti, President, Museums Association of India

As the President of the Museums Association of India, I offer, on behalf of the Association and on my own behalf, my sincere felicitations on the happy occasion of the centenary celebrations of the Madras Government Museum. Barring the Museum of the Asiatic Society of Bengal and of Economic Geology also housed initially in the Society's premises, the Madras Museum is the oldest in India. For the past one hundred years, in spite of various difficulties in its way, it has held high the torch of the various branches of learning and by its sustained and energetic efforts it has brought the masses, literate and illiterate, and the Museum together and has done everything possible in letting our people have a glimpse of our great cultural heritage—an achievement which a Museum in any country would be highly proud of. The Madras Museum has never been a static body. A few years ago it had established a new Archaeological wing and now it is going to have a new Art Gallery. The Madras Museum has thus been a pioneer in Museum activities in India and I wish it a glorious future bringing into fruition what the, Museum movement in a country stands for.

July 6, 1951.

From Prof. Dr. P. A. Hoesein Djajadiningrat, Chairman of the Board of Directors of Lembaga Kebudajaan, Indonesia

'On behalf of the Board of Directors of the Lembaga Kebudajaan, Indonesia, "Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen" I congratulate you wholeheartedly on the first hundredth anniversary of the Madras Government Museum. Your Museum is very well known here, especially by its publications in the archaeological field. The Bulletin of the Madras Government Museum which our Museum Library receives regularly since your Museum and our Society exchange their publications, is highly appreciated by our archaeologists.

We regret very much not being able to delegate one of us to assist at the celebration of the hundredth anniversary of your Museum and being compelled to confine ourselves to this written congratulation.

Wishing the Madras Government Museum crescat et floreat.
August 7, 1951.

From L'Administrateur Général, Bibliotheque Nationale, Paris

The Chief Administrator of the Bibliotheque Nationale, Director of the Libraries of France, wishes to join in the homage which will be paid to the "Madras Government Museum" on the occasion of its centenary and the opening of its new picture gallery.

India has made a vast contribution to the art and culture of the world as the treasures of the Madras Museum show. Sincerest wishes to those who have undertaken this important task.
May 12, 1951.

From T. D. Kendrick, Esq., Director and Principal Librarian, The British Museum, London

I have much pleasure in sending you on behalf of the British Museum our congratulations on the occasion of the Centenary of your Museum, the oldest Government Museum in India. We ask

you and your colleagues to accept our best wishes for the future prosperity and success of the Government Museum, Madras, and assure you of our continued interest in your achievements and programme.
May 7, 1951.

From Sri M. S. Vats, Director-General of Archaeology in India

I felicitate the Government Museum, Madras, on the occasion of its Centenary Celebrations. It can look back to creditable achievement in preserving valuable relics relating to the cultural heritage of South India. Its collections of the Amaravati sculptures and South Indian bronzes constitute unique art treasures of which the entire nation feels proud and humanity is richer today by their being preserved for posterity. Besides these, the Museum possesses noteworthy collections of sculptures from other old sites in South India, pre-historic and megalithic antiquities, and an exceptionally rich collection of South Indian coins. With an enviable record of publications, the Museum has made its distinct contribution to the cultural life of the State, and I have no doubt that with the increasing consciousness amongst the people for their past heritage, it will play a nobler part in the future cultural programme of the State.
July 3, 1951.

From Sri P. E. P. Deraniyagala, Director, National Museums, Ceylon

I am very glad to hear of your centenary celebrations and congratulate both you and your Museum on having done so much for the educational upliftment of the people of Madras Presidency and for the furtherance of knowledge of international value through your valuable discoveries and publications. I wish both you and your Museum increasing prosperity and progress.
April 30, 1951.

From F. J. Alcock, Esq., Chief Curator, National Museum of Canada

' On the occasion of the 100th anniversary of the founding of the Madras Government Museum, the National Museum of Canada extends to her sister institution its felicitations and cordial best wishes. A century of such distinguished service as your Museum has rendered is something of which it can justly be proud.

I trust that the occasion of your centenary celebrations will be a most happy one. It is very gratifying to know that they will be marked by the opening of a new Art Gallery which will be a further factor in the cultural development of your great country. May the coming years continue to add to the prestige and usefulness of your Museum.

July 5, 1951.

From M. A. Leveille, Director, University of Paris, Palace of Discovery

We know the importance of your Museum of Archaeology and the Technical Exhibition organized by you. We are equally aware that you have taken pains towards the formation of a personnel specialized in culture which you have put to the service of the public.

By the experience which we had gained in this Palace of Discovery and the magnificent results which we have obtained, we are convinced that all of your projects shall meet with the best results.

On the occasion of the centenary of your Museum we are very happy to convey to you our felicitations and our good wishes for prosperity.

We hope that the relations that obtain between our establishments shall develop further museographic methods, development of education, the diffusion of science and the generalization of culture.

Please be kind enough, Mr. Superintendent, to accept my most distinguished sentiments, I pray.

April 30, 1951.

From D. Dilwyn John, Esq., Director, National Museum of Wales, Cardiff

It gives me the greatest pleasure to send you on the occasion of the Centenary of the Government Museum, my heartiest congratulations on the completion by the Museum of one hundred years of service to the people of Madras. Your recent Annual Reports show that the Museum retains great vitality; it reorganizes and represents older exhibits in newer ways; it presents Special Exhibitions; it acquires new collections; the members of the Staff prosecute research and publish their results; you share with European and American Museums an enthusiasm to serve teachers and school children; as the years pass you attract more and more visitors to your building. We, in these islands, had the opportunity of seeing in the Exhibition of Indian Art in 1947–1948 some of your great treasures.

I add to my congratulations on the past my best wishes for the future. We labour far apart but our purposes are the same. I hope, as I am sure you do, that they do in some measure serve to bring the peoples of the world closer together.

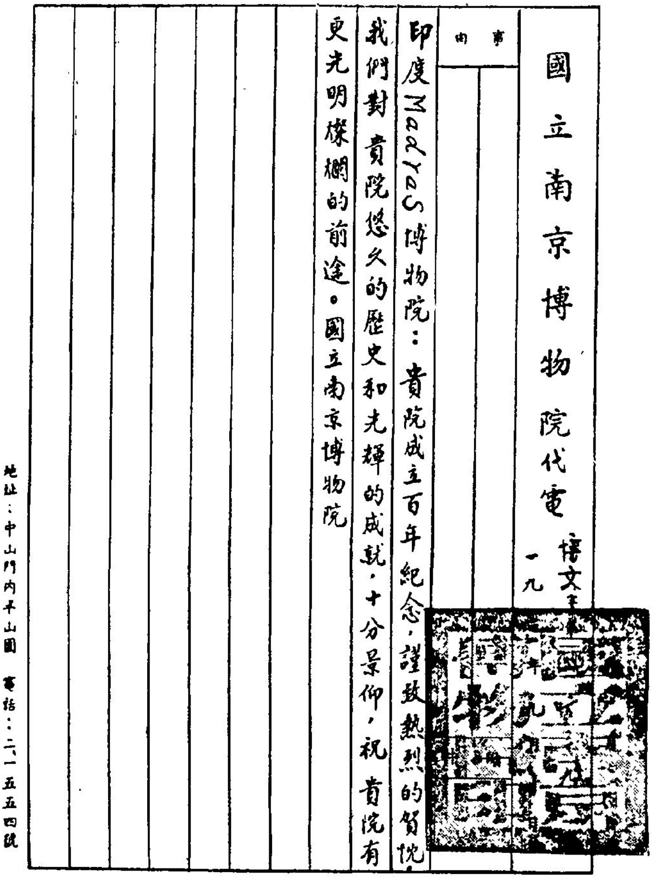
August 22, 1951.

From Dr. F. H. Gravely, former Superintendent of the Madras Government Museum

I send my heartiest good wishes to the Madras Government Museum on the occasion of its centenary celebrations. Throughout the past hundred years, it has played an ever-increasing part in the education and life both of the city and of South India. May it continue to do so through the next hundred years and on into the still more distant future. I shall always cherish the happiest recollections of my time as Superintendent and particularly of the staff's friendly co-operation in all our work.

June 10, 1951.

From the Nanking Museum



國立南京博物院代電

事由

博文字

一九

印度Madras博物院：貴院成立百年紀念，謹致熱烈的賀忱，
我們對貴院悠久的歷史和光輝的成就，十分景仰，祝貴院有
更光明燦爛的前途。國立南京博物院

地址：中山門內半山園　電話：二一五五四號

Translation : We offer you our hearty greetings on the occasion of the 100th anniversary of your Museum. We wish that your Museum may grow more prosperous and brighter in the future. We are glad to know of the long and glorious history of your Museum and wish it greater fame in future.

With best wishes.

September 10, 1951.

From Mr. S. F. Markham, Past President of the Museums Association, Great Britain

Speaking on behalf of my colleagues in the British Museum movement I should like to offer my warmest congratulations on the completion of your first hundred years of service to culture and civilization. The Government Museum, Madras, enjoys a world renown, not the least part of which is due to its splendid series of publications over the past 25 years. May the Museum and all connected with it flourish.

April 27, 1951.

From Dr. Motichandra, Director, Prince of Wales Museum of Western India

I am happy to know that the Madras Government Museum has completed the first 100 years of its life.

Those who are interested in the growth of Museum movement in this country are well aware of the services which the Madras Museum has rendered to students of Art, Archaeology, Natural History, and Ethnography, and to the public as a centre of entertainment and education. Throughout its existence the Madras Museum has tried its utmost to carry out the objects for which cultural centres like Museums are founded, and I hope that in the coming years it will be able to extend its many-sided activities even further.

On this happy occasion when the Museum is celebrating its centenary, I extend, on behalf of the Prince of Wales Museum, my best wishes and hearty congratulations.

July 3, 1951.

From Dr. H. Goetz, Director, Baroda Museum, Baroda

I have great pleasure in sending our sincere felicitations to the Superintendent and staff of the Government Museum, Madras, on the occasion of its first centenary celebrations. The Madras

Museum has a proud record of scholarship and public service which should stand in good stead for its future development and educational activities.

Museums and Art Galleries are essentially educational institutions. The Nation possesses in its leading Museums and Art Galleries an inheritance of inestimable wealth, spiritual and material, gathered together and administered in the very best interests of the people. Properly used, our museums might be one of the most effective levers of broadening the outlook and developing the vision of our public. Indeed they would be the ideal instrument to prepare the nation for its role in the modern world. But unfortunately, however, during the last decades the development of these institutions, measured in terms of government support, has advanced hardly at all, compared with the development of elementary education, secondary education or university education. I do not suggest that the expenditure for this purpose should have increased at the same pace as that for other forms of education. Much more important would be a broad-minded policy of co-ordinating the activities of our museums all over the country, not only between museum and museum, but with our whole educational system, in co-operation and with the confident support of all those interested in the intellectual and artistic growth of our national culture. But at present we suffer from a lack of appreciation of the purpose and of the modern potentialities of these institutions which must be regarded as a definite defect in our whole system of education.

I hope that with the completion of its first centenary, a new chapter will open in the history of the Madras Museum and that its educational service will be made available not only to the State but various other parts of the country.

July 2, 1951.

From Mr. Naji al-Asil, Director-General of Antiquities,
Iraq Government, Baghdad

Although I feel that it may be late now to send you a message for inclusion in your Commemoration volume, it is never too late to send you our most cordial good wishes for the continued success of the Madras Government Museum.

We in Iraq, like you in India, are doing our best to revive the past in our Museums and Publications, not for the mere glorification of a past, which great though it was in many respects, is not, by itself, an active force in the life of the present, but rather to indicate that our endeavours are directed towards the true appreciation and evaluation of the cultural merits of a common human heritage, best used when it serves the higher interests of a nobler humanity.

August 16, 1951.

From the Chairman, Chinese Cultural Delegation

Congratulations for your Centenary Celebrations. On behalf of our Delegation, I send you our best wishes for your further extension and also great success in disseminating popular education.

November 26, 1951.

Messages have also been received from —

Dr. B. S. Guha, Director of the Department of Anthropology of the Government of India.

The Vice-Chancellors of Calcutta, Madras, Nagpur, Delhi, Sagar, Allahabad, Annamalai and the Visvabharathi Universities.

The Director of the Indian Institute of Science.

The Chairman of the Numismatic Society of India.

The Curator of the Patna Museum.

Sri G. N. Das.

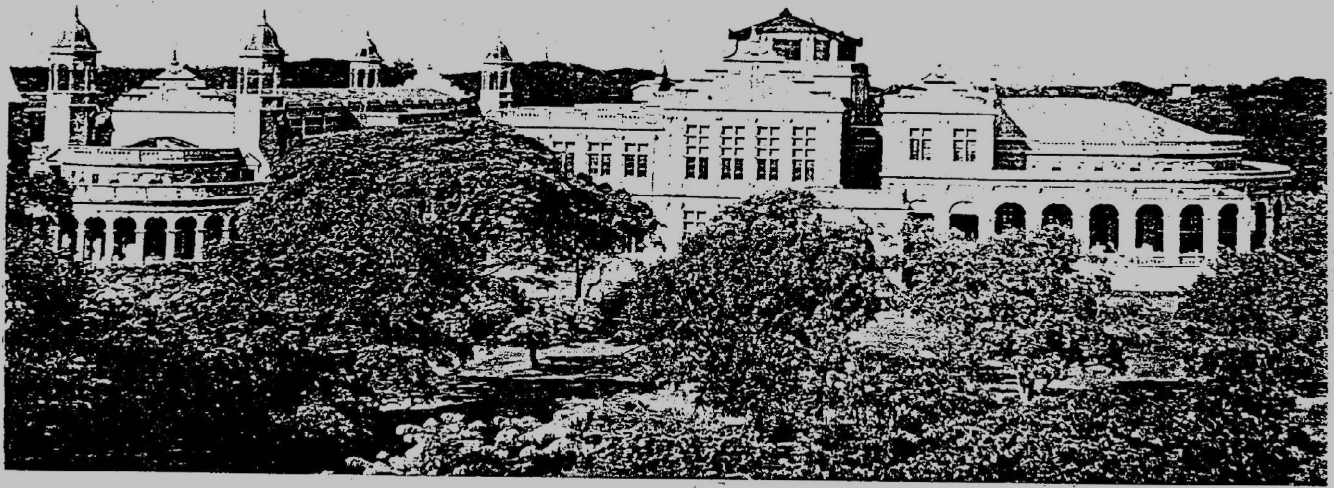
Raja of Karvetnagar.

Sri Perumal, Shantiniketan.

Mr. K. M. Ahmed, Hyderabad Museum.

Dr. Izikowitz, Goteberg.

Sri C. Sivaramamurti, Indian Museum, Calcutta.



View of the Museum and Library Buildings

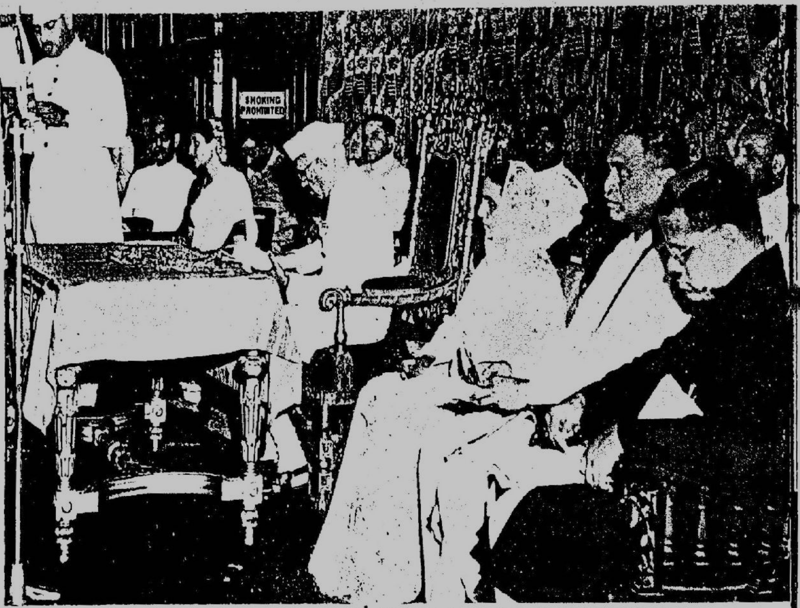
THE CENTENARY CELEBRATION

A BRIEF ACCOUNT OF THE FUNCTION

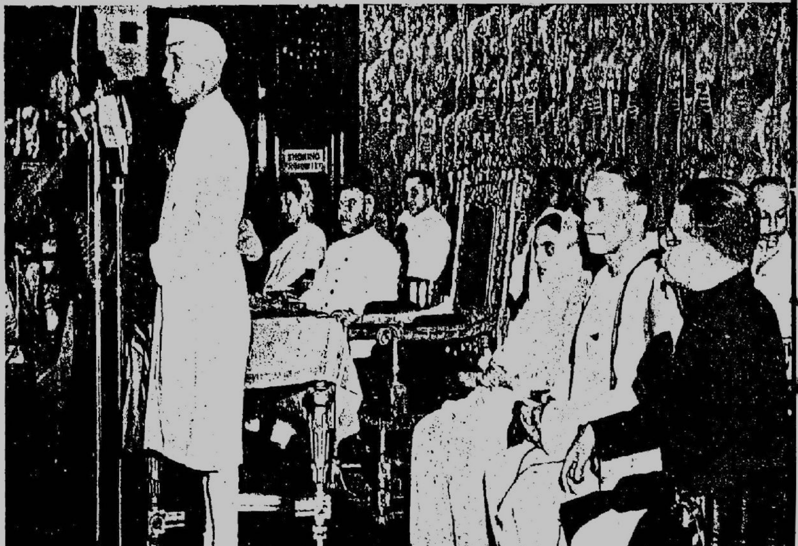
NOVEMBER 27, 1951, was a red-letter day in the annals of the Madras Government Museum, for it was on this day that the Centenary Celebration of the institution was inaugurated by the Hon'ble Shri Jawaharlal Nehru, Prime Minister of India. As part of the same function the Prime Minister also inaugurated the National Art Gallery, sponsored by the Government of Madras.

The Museum buildings and grounds presented a festive appearance on the occasion The day was cool and sunny ; the November showers had made the newly-laid lawns and flower-beds look lovely; crowds of people waited on either side of the Pantheon Road to get a glimpse of the Prime Minister on his way from Raj Bhavan to the Museum for the State function at the Museum Theatre.

The Prime Minister, accompanied by his daughter Shrimati Indira Gandhi, His Excellency the Governor of Madras and Her Highness the Maharani of Bhavnagar arrived at the Museum Theatre at 3 p.m. and was received by the Hon'ble Sri P. S. Kumaraswami Raja, Chief Minister of Madras, the Hon'ble Sri K. Madhava Menon, Minister for Education, Sri K. Ramunni Menon, Chief Secretary to Government, and Dr. A. Aiyappan, Superintendent, Government Museum. He was conducted to the stage of the Theatre auditorium where the elite of the City and other distinguished visitors among whom were the leader and members of the Chinese Goodwill Mission, had already assembled. The proceedings commenced with the singing of *Vande Mataram* by the students of the College of Carnatic Music.



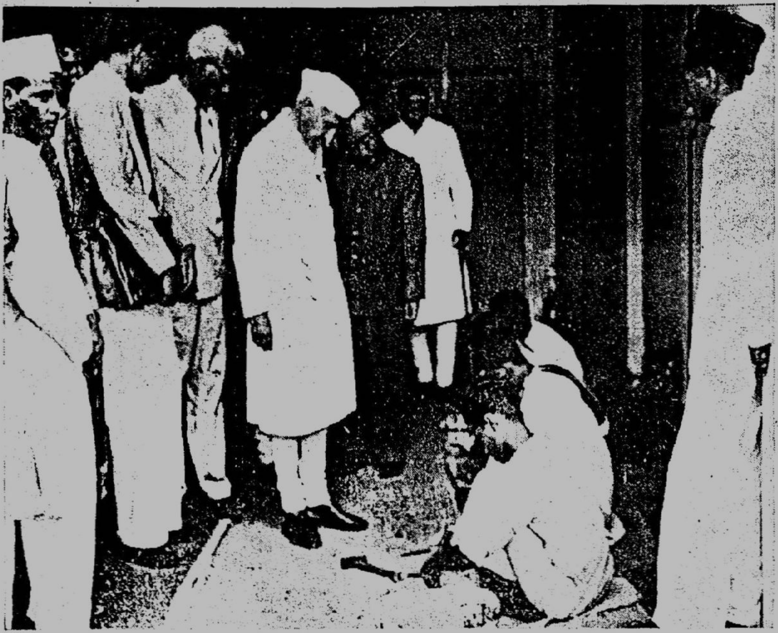
His Excellency the Governor inviting the Prime Minister to inaugurate the Centenary Celebration



The Prime Minister addressing the gathering

The Prime Minister, Chief Minister and Minister for Education, Madras State, proceeding to visit the Centenary Exhibition

The Prime Minister signing in the Museum Visitors' Book



The Prime Minister watching the demonstration of stone-carving and bronze-casting

His Excellency the Governor welcomed the Prime Minister. Speaking about the Madras Museum in general, His Excellency said that it occupied a very important place among the Museums of India and had the distinction of being the first state-owned Museum in India. Its collections of the famous South Indian bronzes and the marble sculptures from the Amaravati Stupa exhibited in the Archaeology Section have been widely admired. The people of Madras had every justification to feel proud of this century-old institution, added His Excellency.

Dr. A. Aiyappan read the messages received from all parts of the world, including those from UNESCO, and the leader of the Chinese Goodwill Mission.

Requesting the Prime Minister to inaugurate the Centenary Celebration, the Hon'ble Sri P. S. Kumaraswami Raja said that it was a unique privilege that on this historic and eventful occasion

The Prime Minister arriving at the National Art Gallery

they should have in their midst the Prime Minister of India. Speaking about the National Art Gallery, the Chief Minister said that it was only in its preliminary stage of organization, but added that the Government were determined to develop it, maintaining the highest standard of artistic excellence.

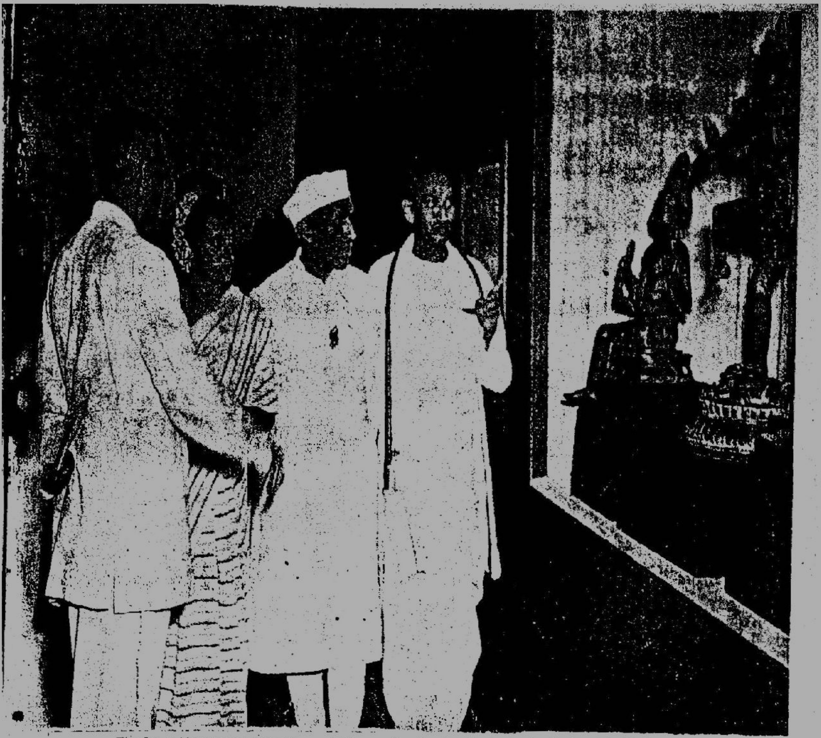
Inaugurating the Centenary Celebration and declaring the National Art Gallery open, the Prime Minister expressed the view that a museum should not be a place merely for exhibiting oddities of a distant unconnected past, but should be a place which would enable them to find the connexion between the past and the present and convey to people some idea of the larger scheme of things even as history should enable them to see in the events of the past the connexion that led them on to the present. He suggested that increasing number of visitors, especially children, should be drawn to the Museum, and added that he would not very much mind if

The Prime Minister greeting the crowd waiting outside the National Art Gallery.

adults did not turn up, because an adult's mind was rather tied up and was not always capable of learning much. Therefore, children in the formative period of their lives, should come to the Museum and learn from the objects they see there. They should invite not only people who normally would come there, but search out for people who would not come otherwise, so that they might profit by the visit and feel that the world was something bigger than normally what they thought it was.

The Hon'ble Sri K. Madhava Menon, Minister for Education, proposing a vote of thanks, said that with the attainment of freedom, the responsibility of the Government for promoting the cultural advancement of the people had become great and that the Madras State had already achieved definite progress in this direction.

The inauguration ceremony closed with the singing of *Jana Gana Mana.*



The Prime Minister studying the world-famous Dancing Siva Image in the National Art Gallery

The National Art Gallery

The Prime Minister, His Excellency the Governor and party accompanied by Mr. Cheng Chin-toh, leader of the Chinese Delegation, proceeded to the Museum to view the Centenary Exhibition. The Prime Minister showed special interest in the bronze collections of the Museum, the exquisite crystal reliquaries from the Bhattiprolu Stupa and the series of exhibits illustrating the life of Sankara, the great philosopher. He was particularly pleased with the demonstration of bronze-casting and stone-carving in the traditional manner by *Sthapatis*.

While leaving the Museum the Prime Minister remarked, "A fine Museum ; I would like to spend more time over here."

The Prime Minister and party next proceeded to the newly-opened National Art Gallery, housed in the buildings of the Victoria Memorial Hall, adjacent to the Museum. There the Prime Minister was introduced by the Chief Minister to Sri K. M. Unnithan, Chairman, and to Sri D. P. Roy Chowdhury and Dr. J. H. Cousins, Members of the National Art Gallery Committee, who took him round. The Prime Minister evinced keen interest in the collections, particularly in the exquisite bronzes of Rama, Sita, Lakshmana and Hanuman and the world-famous Nataraja bronze piece.

Diorama of the cobra

—*Centenary Exhibition*

Speech by His Excellency the Governor of Madras

Hon'ble Prime Minister, Ladies and Gentlemen,

It gives me great pleasure to be present on this happy occasion and to welcome our distinguished Prime Minister and this representative gathering of the citizens of Madras. We are deeply grateful to the Prime Minister for having kindly accepted our invitation to inaugurate today's celebration, despite his numerous and pressing pre-occupations. We regard your presence with us as a token of your keen interest in the cultural progress of our State.

The Madras Museum occupies a very important place among the Museums of India and has the distinction of being the first state-owned Museum in our country. Its collection of the famous South Indian bronzes and the marble sculptures from the Amaravati Stupa, exhibited in its Archaeology Section, have been widely admired. This Museum has also gained international reputation through its publications covering a variety of subjects. The people of Madras have every justification to feel proud of this century-old institution.

On an occasion like the Centenary, one is naturally tempted to be a little retrospective. In 1851, Sir Henry Pottinger, the then Governor of Madras, obtained the

sanction of the Court of Directors of the East India Company in London to accept, from the Madras Literary Society, a gift of its geology collection, on condition that the Government would start a Museum. Numerically, the collection was not large. But, the articles which came thus into the possession of the Madras Government, formed the nucleus of the Madras Central Museum, as it was then called. Starting with such a modest beginning, this institution has grown to its present size, in the course of a hundred years, and we have met here today to inaugurate the second century of its life.

It is unnecessary for me now to trace the development of the institution. But I would like to mention a few interesting facts. Originally the Government Museum was located in the Old College which stood in the premises of the present office of the Director of Public Instruction. Later on in 1854, it was shifted into another building called the Pantheon, which was also known as the Public Rooms or Assembly Rooms. This building was being utilized for banquets, balls and dramatic performances by the European colony of Madras from the last decade of the eighteenth century. Of the old Pantheon, very little remains. It is said that the plinth and the ornamental flooring which form part of the Zoological galleries of the Museum, belonged to the old Pantheon.

The first officer-in-charge of the Museum was Edward Balfour, a Surgeon, who held charge of the Museum in addition to his regular duties as a Medical Officer, attached to the Governor's Body Guard. He had advanced views on Museum technique and felt that the Madras Central Museum should have the widest appeal and scope. With this ideal, he worked hard. After his departure, there was no one to continue his work with the same zeal and wide vision. Soon, however, the situation changed for

the better and the Museum gradually developed into the fine institution that we see now.

While the Museum grew and flourished, it came to include within its ambit, what is called the 'graphic' section of fine arts, by collecting treasures of art, though within restricted limits. Many valuable pieces of art, including paintings by distinguished painters, were acquired and exhibited.

After the Government took the recent decision to open the National Art Gallery, selected items from out of these old acquisitions were transferred to the National Art Gallery to be displayed by the side of pieces selected from other places under the control of the Government, like the School of Arts, supplemented by items received as donations.

In this connexion, I may also mention that I had the privilege to send out an appeal to lovers of art and others who are known to have art treasures in their possession, for helping us with donations of such pieces as they could spare. I am glad to say that the response has been encouraging. I take this opportunity to express my very grateful thanks to those who have been kind enough to make the donations. But there may yet be others whom my appeal may not have reached. To them, I make a special appeal on this occasion to help us with generous donations. An art gallery is rarely started by a Government. And now that it has been started, it is up to the citizens to lend us their support in every manner, especially as our present collection is by no means large. We have made only a modest beginning but have tried to keep the standard of selection very high and it is gratifying to mention that the Gallery even now contains some of the most remarkable pieces of art. To mention a few, there are fine paintings in the Andhra, Tanjore, Rajput,

and Moghul styles; two impressive paintings of Raja Ravi Varma; some beautiful bronzes which are known all over the world and several pieces of wood- and ivory-carvings of great charm. We believe we have begun well. I am confident that the citizens of this State will make this Art Gallery the envy and pride of our country before long.

And now, I extend, once again, a hearty welcome to our beloved Prime Minister whose keen interest in the development of fine arts is so well known. Our infant National Art Gallery is certain to prosper under his blessings.

Jai Hind.

Speech by the Hon'ble the Chief Minister

The Hon'ble the Prime Minister, Your Excellency, Ladies and Gentlemen,

It is our unique privilege, that on this historic and eventful occasion, of celebrating the Centenary of one of our premier cultural institutions, the Madras Museum, we should have in our midst the Hon'ble the Prime Minister of India. An institution of great importance and attraction that it is, it is indeed a happy augury that the celebration of the Centenary Festival of the Museum should be blessed by our Leader and the Prime Minister of India.

The Madras Museum has had a record of an unbroken and creditable service, during the long period of a hundred years which it has completed. It stands out now as a great repository of invaluable collections which take our minds back to the glories of the past and reveal to us the potentialities of the future.

I need hardly point out that the functions of a Museum are to collect, conserve and exhibit objects of scientific interest, for the benefit of the community, and to interpret them to a wider public through research and publications. I may with confidence say that all these functions are being adequately discharged by the Madras Museum. In the matter of cultural subjects, valuable

IIII

work has been done by it. In the field of prehistoric archaeology, it has the most significant collection of stone-age implements which makes it a centre of attraction to the students of history. The fact that this Museum has been maintaining very high standards, both in the scope of its collections and in the display of exhibits, as well as in respect of the services it offers to the public—whether to the casual visitor or the research scholar—has been recognized by competent observers, such as the Committee of the Museums Association of Great Britain.

A word about the publications of our Museum will be appropriate here. The Catalogues so far published are not mere inventories of its exhibits and collections, but authoritative works of reference, useful for research scholars. The Bulletins of this Museum are exhaustive monographs, written by eminent scholars and scientists. The photographic service, the facilities afforded to the research students and the exchange relations built up by this Museum are international in character. Periodical special Exhibitions and Art Exhibitions have become a regular feature of the activities of the Museum during recent years. The Museum also runs a training course in Museum Technique for teachers to enable them to build up better museums in their schools.

I might say with pardonable pride that Madras is fairly advanced in some of the fine arts, particularly dancing and music. But I am afraid, the same cannot be said in respect of painting, sculpture and architecture speaking with reference to the modern achievements. The importance of fine arts in a general sense, as a regulating factor in the day-to-day life of individuals, families and communities, has not yet been sufficiently realized, even by some of the well-educated among us. If there had

been a little more attention paid to aesthetics, our houses, whether they be of the poor or of the rich, would have been cleaner; our towns would have been more orderly; and our places of public resort more inviting. It is in this context, that museums, art galleries and the art curricula in educational institutions, become specially significant. And I am glad to add that we have given the fine arts their rightful place in the High School and College courses.

Though I have said that artistically we are now somewhat backward in certain respects, I am not unduly pessimistic about the future. The descendants of the architects and sculptors, who built the great temples of Tanjore and Kancheepuram and carved the immortal sculptures of Mahabalipuram, are languishing in our villages. The potentialities of this ancient community of Sthapatis, i.e., the architects and sculptors, are lying dormant for want of proper encouragement. But there is evidence all round of re-awakened interest in the fine arts. It is my hope with the assistance of our institution devoted to art, including the National Art Gallery which is now being opened, the artistic genius of South India will blossom forth afresh and create examples of art worthy of our great past.

The National Art Gallery, which the Hon'ble the Prime Minister will be pleased to declare open shortly, is only in its preliminary stage of organization. But we are determined to develop it, maintaining the highest standard of artistic excellence.

Ladies and gentlemen! How fitting and appropriate it is that such an eventful and historic function as this, connected with a great institution of art and culture, should be inaugurated today by one, who is himself a lover of art and an ardent advocate of a harmonious blending

of the different cultures of the world; and one who represents all that is best in the Indian Culture. May we remind you, Sir, that in requesting you to inaugurate the Centenary Celebration of the Museum and the National Art Gallery, we have been actuated by a genuine realization of the need for determined action to regenerate the artistic outlook of the common man.

I have now great pleasure in requesting you, Sir, to inaugurate the Centenary Celebration of the Madras Government Museum and to declare open the National Art Gallery of Madras.

Speech by the Hon'ble Shri Jawaharlal Nehru,
Prime Minister of India

Your Excellency, Chief Minister and Friends,

I am sorry to confess that I have never seen the Madras Museum or been inside it in spite of its hundred years of history. At any rate, I do not remember having been there—unless I went there in my early childhood, in which case I may not probably remember. I am grateful to you for inviting me to inaugurate this Centenary Celebration because I am deeply interested in my own—rather layman's—way in museums. I am not an expert in anything but I have dabbled in a large number of activities and I am interested in many things. I am even interested in experts from a distance. (Laughter.) *I find, it is not a question of my finding it, it is obvious, that experts have their use but often enough experts think that they function only in a world of experts for other experts with the result that they somehow lose touch with other persons who are not experts or with the common man or the ordinary layman. I merely mention that because I felt (I cannot speak about the Madras Museum because I have not been here and I have not been connected with it but in regard to other museums in India) they exist in some upper stratosphere unconnected with humanity at large and very few persons ever find their way there except, as I said, experts.*

Now, museums, I think, are very necessary from a variety of points of view and some of the most exhilarating times that I have spent have been in museums, not in this country but chiefly in Europe and I have always been sorry that I could not spend much more time there. What exactly a museum is and what purpose it serves are questions which can be answered in many ways. I suppose it is some kind of congealed history, some kind of trying to put a bit of the past locked up in your cabinets and placed so that you may have a glimpse of it. It is a place where you collect beautiful objects and it is good to have beautiful objects for people to look at. More and more, people seem to lose all idea of what beauty is and get surrounded by articles which certainly are not beautiful whatever else they may be. It is quite extraordinary how most people are losing completely any real appreciation of beauty. What is the reason? I am not talking of India only but of many other countries too; whether it is symptomatic of the modern age, I do not know, but the fact remains that we are getting more and more shoddy and sometimes it is worse because it seems we take pride in the fact that we are getting shoddy. Therefore it is desirable to collect articles of beauty. May I say, even in a matter like children's toys why should they be presented with horrible golliwogs? I do not know! No doubt, children are interested in animals and they should have them. Why not have beautiful things and why not train them in the appreciation of beauty from their childhood instead of their being presented with things in the shape of toys which are caricatures of anything that you see and which no doubt excite their interests but nevertheless lay the foundations of not appreciating beauty? Because of this tendency, which appears to me to grow throughout the world, of this lack of appreciation of any kind of beauty, it is desirable to collect articles of

beauty from the past or the present so that we may have some standard at least to judge by and that the people who come there may see articles of beauty for a while at least even though generally they may not see them in their lives.

There is another aspect of the museum which, as I said, is congealed history or whatever it may be. Do people go there to see just odd things oddly displayed, just to see something that existed five hundred or a thousand years ago, as an oddity or do they go to see something from which some chain of ideas may come into their heads which may be somehow related to the present or not? I do not know how history is taught because I hardly learnt history in the normal way in the College. I read it myself and therefore my reading was not at all guided by experts and it was casual reading though widespread. Anyhow I was fascinated by history. My fascination for history was not in reading about odd events that happened in the past but always rather in its connexion with the things that followed leading up to the present. Only then it became alive to me. Otherwise it becomes an odd thing unconnected with my life or the world. It must somehow be connected in a series, one thing of the past leading to something else and that something else leading to the present. Then alone it becomes a live thing.

Now applying that to the museum, a museum which is meant really to interest and educate must be something which connects its objects with the things the visitors are used to see in their lives and with their environment and should not be just a symbol of the dist nt unconnected past. I do not know how far our experts think on these lines and prepare their museums on these lines. It is not the normal antiquarian's view of things. An

antiquarian is necessary, of course, to collect these antiquities but an antiquarian who himself becomes a piece of antiquity is not much good. (Laughter.) *He must have some relation to the modern world. Then only can he connect a piece of antiquity with the modern world and thereby make it a living thing for those who see it and understand it. Forgive me for these personal reflections. It seems rather incorrect, not right, for us to treat any period of the past as something cut off or separate from subsequent periods or the present and if I look at it that way it does not interest me much. If I look at it and if there is the slightest connexion between that and my present-day thoughts and activities, it is a blessing for me and it is of great interest to me. I am giving these rather personal reactions to events because I think it might interest some of you, gentlemen, especially those connected with museums. If I may say so with all humility, the greatest danger in the modern world is that people in their desire and necessity for them to specialize, lose perspective of other things. They become specialists and very fine specialists at their job and undoubtedly they can do it better than anybody else but they lose the larger view of things and therefore, perhaps, they may be said to be only specialists and nothing more. Some of you may know a line or two from Wordsworth :*

'A primrose by a river's brim,
A yellow primrose was to him
And it was nothing more

like the botanist who studied the Latin names of flowers but lost all sense of the beauty of flowers. So, in our desire to specialize as we must, there is this danger that we spend all our energy over that one department in which we specialize and have no flow of effort for the rest of life. In other words we become an expert in something but lacking in wisdom about everything else and, perhaps,

in the world today which is so learned in so many subjects yet there is so little wisdom because we all know something about a very little part of life and very little about the larger scheme of things.

Now coming back to the museum, a museum which is a collection of all kinds of things of beauty or utility of the past and present should convey to us some idea of the larger scheme of things. It should, like everything else, ultimately lead to an understanding of the present scheme of things or help to some extent towards that end. I like museums of antiquity and I have spent very long hours— I ought to have spent much more—in some of the museums and art galleries of Europe. But there is another type of museum which perhaps the antiquarians consider to be of a lower species. That is the type which may be represented by, let us say, the Deutsches Museum of Munich and some other museums in Paris or London where one could see modern life, modern activity, the growth of science, scientific growth from the pre-scientific period, etc., a fascinating thing containing more education than years of courses in college or university. It is also a thing I should like to grow as part of general education, school or college education. Lastly, the whole point of museums, whatever they may be, museums of antiquity or museums of modern life, the whole point is that more and more and larger and larger numbers of people should visit them and learn from them. They should not be confined to visiting Directors of Museums from other countries but a large number should come and learn and, in fact, facilities for their learning should be given. That is to say, some arrangements should be made for lectures to be given to ordinary folk who come there, for guides to explain to them what these things are and arouse their interest in them, especially for school children

and college boys and girls to come there and learn. That is the main purpose of museums. I would not very much mind if no adult came to the museum because his mind is rather tied up and is not always capable of learning much but, in the formative period of childhood and youth, it is very necessary that they should come to the museums and learn. Their minds will be affected by the objects which they see there. I should like this aspect of education through the museums to be developed, not by appeals to the public, but by encouraging them to come, inviting people to come, inviting not only the people who would normally come but, in fact, searching out people who would not otherwise come, persuading them to bring their children and explaining to them so that they may widen their vision and feel that the world is something bigger than what they normally thought the world is. As I grow old, I admit, I tend to philosophize and dole out my advice to others. But, I am happy to be here to participate in this Centenary Celebration of this oldest of India's museums and I hope it will flourish and expand and, if I may so say, expand in the direction that I have indicated.

I declare formally the National Art Gallery open.

Speech by the Hon'ble Minister for Education

The Hon'ble the Prime Minister, Your Excellency,
Ladies and Gentlemen,

I deem it a great privilege to participate in today's celebration which has just been inaugurated.

With the changes following the termination of the British Rule and the birth of our Republic, the responsibility of the Government for promoting the cultural advancement of the people has become great. The Madras State has been making its contribution in several directions in the past few years to achieve this aim, the Education Ministry of which I am in charge now sharing a good portion of this work. But amongst all our endeavours, today's function will stand out as a landmark in view of the happy association of the Hon'ble the Prime Minister of India with it.

This century-old institution which had its beginnings in the efforts, in the eighteen-forties, of the Madras Literary Society, a voluntary organization, to open a Museum of Economic Geology, has grown into its present magnificent size in the hundred years of its remarkable progress under the fostering care and attention bestowed by a succession of Superintendents amongst whom Mr. Thurston, the author of the monumental work on 'Castes and Tribes of South India' and Dr. Gravely,

need special mention. The present Superintendent, Dr. Aiyappan who succeeded Dr. Gravely in 1940, has kept up the high traditions built up by his predecessors; and I may unhesitatingly say that this celebration is due primarily to his enthusiastic efforts. When Dr. Aiyappan made the proposal that this occasion should be celebrated in a fitting manner, the Government accepted it. It was decided that the opening of the National Art Gallery should be made a part of the Centenary celebration. As you all know, in South India we have not had an art gallery as such till now, though the Madras Government's Museum was functioning, in a general sense, as an Art Gallery, in addition to being a Museum for the exhibition of objects of antiquarian interest. It was considered that the occasion of the Centenary would be appropriate for the opening of a separate art gallery. The Government also desired that our distinguished guest, the Hon'ble the Prime Minister, Shri Jawaharlal Nehru, should be requested to inaugurate the Centenary and open the Art Gallery. Our Prime Minister's response to our request was both prompt and generous. On behalf of the Government I render him our heartfelt thanks.

The presence of our popular Governor, His Excellency the Maharaja of Bhavnagar and the Maharani lends a special charm to this occasion. Let me acknowledge with deep gratitude the great encouragement which His Excellency the Governor, a well-known patron of Art, has given us in our endeavours to open our new Art Gallery. I will not be revealing a secret if I mention that the very name the 'National Art Gallery' was suggested by His Excellency the Governor.

It gives me great pleasure to gratefully acknowledge on this occasion the advice and the guidance we have received in this connexion from our Chief Minister Sri P. S. Kumaraswami Raja, who has been evincing

keen interest in the celebration of the Centenary and in the opening of the Art Gallery.

Our sincere thanks are due to Mr. Ramunni Menon, the Chairman of the Committee of the Victoria Technical Institute, Mr. Sillick, the Secretary and the other members of the Committee who promptly responded to our request to lease the Victoria Memorial Hall for locating the Art Gallery.

I take this opportunity to express our appreciation of the work of the Special Committee formed for the purpose of selecting and displaying the collections in the Art Gallery. Our special thanks are conveyed to Sri Roy Chowdhury, the eminent painter and reputed sculptor, and Dr. James Cousins, the well-known connoisseur and veteran art critic, whose services were invaluable in this connexion.

The Special Centenary Exhibition which has been opened now is indebted to a few sister institutions as well, such as the Indian Museum, Calcutta, the Asutosh Museum of Art, Calcutta, and the Trivandrum State Museum. I wish to thank them all on this occasion.

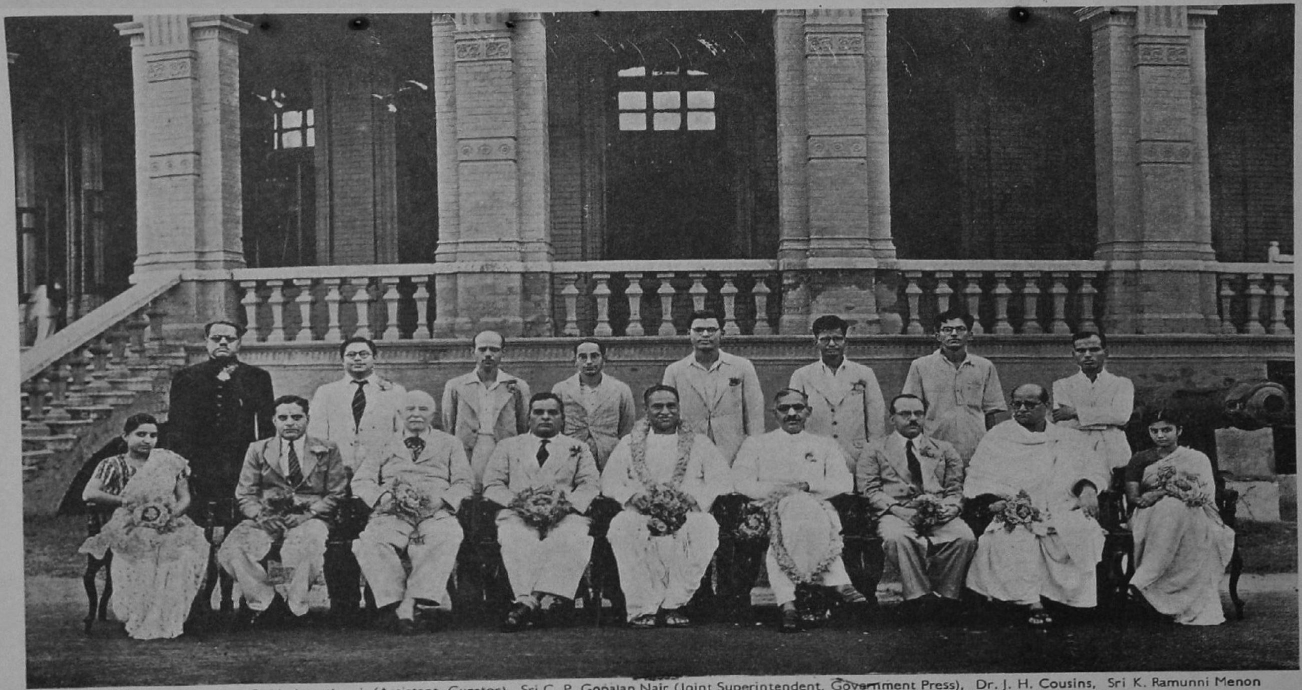
Prominent among the individual donors who have contributed to the success of the exhibition is Sri Sankaracharier of the Kamakoti Peetam who has helped us by making it possible for the opening of an interesting section in the Centenary Exhibition concerning the life of Adi Sankaracharier. I convey our thanks to him. There are several other donors who have made gifts to the Museum during the last few months. As the list is long, I am unable to mention them individually, but we convey our thanks to one and all of them. Due acknowledgments of these donations have been made, and the particulars are entered in the Register of Donations exhibited in the Museum. It is specially to be mentioned that

Dr. B. Sundararaj, a former Zoological Curator of the Museum, has sent a prize amount of Rs. 100 in commemoration of the Centenary of the Museum. We appreciate this gesture acknowledging it with gratitude.

You might recollect that I referred to Dr. Aiyappan's efforts in connexion with today's celebration. While acknowledging these with thanks, I wish to add a word of appreciation about the services rendered by the staff under him. Let me also convey our thanks to the officers and staff of the Police who have made excellent bandobast arrangements. Our sincere thanks are due also to the officers and staff of the Public Works Department and the Superintendent and staff of the Government Press who have turned out a considerable amount of work in a very limited period. Our thanks are also conveyed to the British Council, the British Information Services and the United States Information Services for their contributions to the Centenary Exhibition. We are obliged to the officers and staff of the All-India Radio who have agreed to relay our programme and to the students of the Karnataka Music College who have agreed to participate in this evening's function. I wish to convey our thanks to them. Last but not least, I wish to convey our thanks to you all, Ladies and Gentlemen, who have responded to our invitation to grace this occasion.

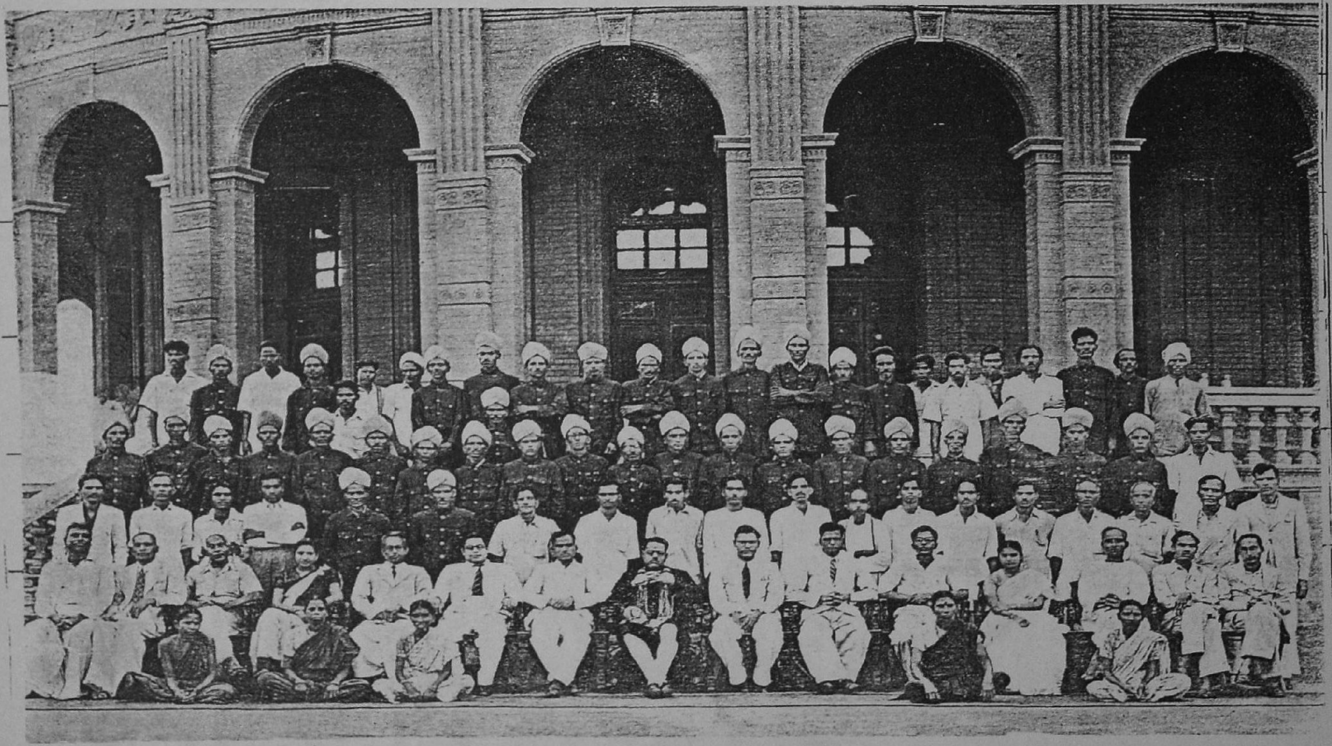
Before I resume my seat, I have another pleasant function to perform. We have prepared for this occasion a Centenary Souvenir. I have great pleasure in presenting a copy of it to the Hon'ble the Prime Minister, Shri Jawaharlal Nehru.

Jai Hind.



Seated (left to right): Mrs. G. M. Arputharaj (Assistant Curator), Sri C. P. Gopalan Nair (Joint Superintendent, Government Press), Dr. J. H. Cousins, Sri K. Ramunni Menon (Chief Secretary), Hon'ble Sri P. S. Kumaraswami Raja (Chief Minister), Hon'ble Sri K. Madhava Menon (Minister for Education), Sri K. M. Unnithan (Secretary to Government, Education Department), Sri D. P. Roy Chowdhury (Principal, School of Arts and Crafts), Kumari Vimala (Assistant Curator).

Standing (left to right): Dr. A. Aiyappan (Superintendent, Government Museum), Sri V. Damodara Menon (Office Assistant), Sri M. S. Chandrasekhar (Curator, Botany), Sri P. N. Mohandas (Curator, Numismatics), Sri S. T. Satyamurti (Curator, Zoology), Sri C. H. Jayadev (Curator, Anthropology), Sri T. V. Satyamurti (Curator, Chemical Conservation), Sri P. R. Srinivasan (Curator, Archaeology).



The staff of the Museum

Hundred Years of the Madras Government Museum

(1851–1951)

By Dr. A. AIYAPPAN

Superintendent, Government Museum

EARLY EFFORTS

THE FIRST HALF of the nineteenth century was, administratively speaking, the best period of the English rule in India. The task of conquest and consolidation of the Indian Empire was accomplished by that time, and the administrations were free to lay the firm foundation of the large number of Government departments for the improvement of communications, public utility services and scientific and educational institutions. Politics and internal diplomacy which from 1909 onwards occupied a great deal of the time and energy of the Governors and senior civil servants were, at this time, at their minimum and a very able body of administrators were free to devote themselves loyally and whole-heartedly to their great work of exploiting the resources of the country and without sacrificing British interests making the Indian people benefit by British rule. It was about 1828 that the Madras Literary Society and Auxiliary of the Asiatic Society of London started its quiet campaign to

start a Museum of Economic Geology at Madras. The Society began collecting geological samples, but it had neither the men nor money nor rooms required to make a Museum out of the sporadic gifts of material received for that purpose. In his letter of November 10, 1843, addressed to the Chief Secretary to the Madras Government, the Secretary of the Madras Literary Society requested that Government may be pleased to take the initiative for the formation of a Museum of Economic Geology.[1] There was already, at this time, a Museum at Calcutta, known as the Museum of Economic Geology of India, but in the opinion of the Society, the Museum at Calcutta would evoke little enthusiasm in the minds of the people of Madras as it would be of little direct use or benefit to them. The Society based its demand for a public Museum at Madras on the growing economic distress of the Presidency. "The little demand for the agricultural productions of the country, the cessation, almost complete, of demand for its manufactures, are, in this Presidency especially, great impediments to prosperity" and, therefore, the letter adds, there is need to develop the non-agricultural resources and also help the people to find new means for their economic improvement. In a memorandum, dated 5th December 1843, addressed to the Chief Secretary to Government, Major-General W. Cullen of Travancore referred to the failure of the efforts of the Madras Literary Society from about 1828 to build up a Museum at Madras and made the suggestion for starting Local Museums "a small museum for every Collectorate and for which a room might be set apart in Cutcherry or Court House . . . The advantage of such a Museum in a public building and under the charge of the Collector will be evident—no person is likely to be more interested than the Collector in possessing such a Museum for his own information and reference." According to General Cullen's memorandum, "contributions might from time to time be made to some general Depot at the Presidency." This central Depot was to be "under an engineer under the Secretary to the Department of Public Works under the Board of Revenue." He thought it should be a Government measure if it were to succeed. General Cullen hoped that those officers who would be helping the Local Museums would interest themselves not only in minerals, but in all branches of statistics and "the more influential natives of the districts would also probably take considerable interest in such an undertaking" if they found it was likely to lead "to the encouragement of agriculture or improvement of processes."

In a lengthy minute, dated February 28, 1844, Henry Chamier, Member of the Council, discussed the letters from the Madras Literary Society and from General Cullen and commended the latter's suggestion to the Court of Directors of the East India Company. Chamier considered that the Local Museums proposed by General Cullen would be useful not only to engineers and

businessmen but also to the scholars of the provincial schools in the mufassal which Government at the time had under contemplation. According to this minute, a Museum at Madras, associated with the Madras University, and " formed by contributions from the District Museums, to which public may have access " will accomplish the object which the Madras Literary Society had in view.

In reply to a reference made by Government on the subject, the President of the University reported on February 9, 1847, that the University was still in its early stages of formation with one High School and, to run a Museum, it should have more extensive buildings and more staff. On the subjects of the letters of General Cullen and the Secretary, Madras Literary Society, the Court of Directors replied in Despatch, dated 20th May 1846, " With reference to the proposition for establishing Local Museums in the Provinces, consider for reasons stated, that the formation in the first instance of a Central Museum at Madras which might be advantageously connected with the University should be the primary object and willingly authorize such small charges as may be necessary for the collection and transmission to the Central Museum of interesting objects from any Local Museums in the Provinces as it may hereafter be expedient to authorize."

In the Minutes of Consultations, dated 4th August 1846, Government decided to communicate the above decision to the Madras Literary Society, the Revenue Board in the Department of Public Works, the Military Board and the President and Governors of the Madras University " who will be pleased in concert with one another to adopt such measures as they may deem expedient for the formation of a Central Museum at the Presidency."

Several months were spent in the search for a building which might be rented for the purpose of the Museum. The Governor was doubtful whether the Court of Directors had sanctioned a special building and the appointment of a Curator who, in his opinion, " must be a person of education, not merely in the Sciences and languages of Europe ", but should be a " qualified scholar in the languages of the East and the salary of such an individual must be fixed on a handsome scale commensurate with his important duties." The allowance proposed was Rs. 500 per mensem and Pottinger suggested that the " situation might perhaps be given to some qualified Officer of the civil or military establishment already holding an appointment in the Presidency." The Board of Revenue in the Department of Public Works suggested renting a building known as Ameer Bagh belonging to " His Highness the Nabob of Arcot " who was willing to let it out. This suggestion, it appears, was not accepted. For various reasons, the idea of attaching the Museum to the University was also dropped for the time being.

Surgeon E. G. Balfour, Officer-in-charge, 1851–1859

Surgeon EDWARD BALFOUR

Officer-in-charge. (1851–1859)

In 1850, Assistant Surgeon Edward Green Balfour, Medical Officer of the Governor's Bodyguard and holding additional charge as Assay Master, offered his services as Officer-in-charge of the proposed Museum. He was then the Chairman of the Committee of the Madras Literary Society and also the Secretary of the Central Committee of the 1851 Exhibition. It was most unlikely that a more versatile person than Dr. Balfour would have been available at that time or at any time for starting and developing the Museum at the Presidency. The following particulars about Dr. Balfour are from Bucklands' "Dictionary of Indian Biography" (1906):—

> ***Edward Green Balfour*** (1813–1889).—Doctor and author; son of Capt. George Balfour, and nephew of Joseph Hume, M.P.: born September 6, 1813; educated at Montrose, and Edinburgh University; in 1839 went to India in the Medical Department, serving in both the Bombay and Madras Armies; became full Surgeon in 1852; wrote medical papers on subjects relating to the health of the troops, and besides his profession did much useful work: studied Oriental languages, and founded the Muhammadan public library at Madras; established, in 1850, a Government Central Museum, and was Superintendent for 9 years; published an Encyclopædia of India, which went through several editions; and commenced the Mysore Museum, 1866; was Political Agent with the Nawab of the Carnatic for years; as Deputy Inspector-General of Hospitals, 1862–1870, he served in the stations under the Madras Command, and as Surgeon-General, Madras, 1871–76, paid much attention to female medical education, for which the Madras Medical College was thrown open; Fellow of the Madras University; retired in 1876, and died December 8, 1889 (pp. 23–24).

The Court of Directors (Minutes of Consultations, dated 29th January 1851) most readily and gladly accepted the offer of Dr. Balfour, possibly because his services were entirely honorary. It was also decided to house the Museum in the rooms on the upper floor of the College, with the collections, mostly geological, numbering about 1,100 of the Madras Literary Society as its nucleus. A few sculptures were lying on the green in front of the College, to which the Government proposed to add the duplicates left over after despatching the exhibits for the Great Exhibition of London in 1851. A staff of a "native" curator on Rs. 10–8–0, an Assistant on Rs. 10 and a Hamal on Rs. 6 per mensem were sanctioned in the order, dated 8th July 1851 (under the authority conveyed in paragraph 13 of the Honourable Court's Despatch of 21st May 1846). Dr. Balfour worked hard to reduce to some order the miscellaneous collections which had accumulated in the Society's premises.

Collection Campaign

The first letter in the first letter book of the Museum, College, Madras, is dated 9th June 1851 and addressed to Dr. A. Lorimer, M.D., Secretary to the Medical Board, thanking him "for the very valuable present of fishes" to the

Government Museum on the 17th May 1851. As the Medical Board probably had jurisdiction over Officers serving in the Hyderabad, the Nagpur, the Saugor and Nerbudda Territories and in the Burmese and Malayan Peninsula, Dr. Balfour asked for specimens illustrative of Natural History from these areas. Specimens could be sent by "Banghy dock", free of cost if addressed to the Museum, College, Madras. For the next few months, Dr. Balfour was engaged in writing letters to a vast number of army engineers, medical officers and his personal friends in India, Burma, Malaya and England for gifts to the Museum. Among the distinguished men to whom Dr. Balfour wrote for help was Sir Charles Lyell, F.R.S., whom his (Balfour's) uncle, the well-known parliamentarian Joseph Hume, had introduced to him. Dr. Balfour's appeal was followed up by the general appeal made by Government themselves. As it reflects the enthusiasm of the Government for the new institution, I reproduce it below in full:

NOTIFICATION.

Fort St. George, August 14, 1851.

The Honourable the Court of Directors having expressed their approval of the establishment of a Central Museum at the Presidency and of local repositories in the interior, the Madras Literary Society with a desire of promoting the Honourable Court's views, lately presented their collection to Government. The Right Honourable the Governor in Council has added the duplicate specimens remaining after despatching the articles for the Grand Exhibition; and he now invites the servants of Government and the European and Native community in general, to assist in the development of the Government Museum, which is open in the College of Fort St. George.

The whole of the upper part of the College of Fort St. George has been assigned for the specimens; an allowance, which Assistant Surgeon Balfour, the Officer-in-charge, has reported to be, for the present sufficient, has been sanctioned for an Establishment and for the purchase of specimens; and further arrangements will be made as the Institution expands.

The Governor in Council is of opinion that the Central Museum at the Presidency should combine the objects of a Museum of Practical or Economic Geology, and of a Museum of Natural History, for which the specimens from the Mineral, Vegetable and Animal Kingdom, and those of Machinery, Manufactures, and Sculptures already collected admirably serve as a commencement.

In the extension of a Museum of this nature every person may have it in his power to aid, as every point of information, and every specimen that may be sent will be acceptable; but, in order to guide contributors and to give publicity to the arrangements and objects of the Institution, the Officer-in-charge will occasionally print and circulate notes and extracts from publications on points connected with subjects likely to be of use.

The very numerous and liberal donations already received from the European and Native community encourage the expectation that the Museum which is even now of importance will soon become greatly increased; but much assistance is anticipated from the various Departments of the Government, who will give the Officer-in-charge every aid in their power and second the efforts of individuals disposed to respond to this invitation.

Communications from the Provinces, addressed to the Officer-in-charge of the Madras Government Museum, will be received free of postage, and parcels containing specimens similarly addressed, if delivered at the Cutcherries of Collectors, or to the Officers of the Commissariat or Ordnance Departments will be forwarded by those Officers to the Presidency as opportunities may offer.

(By order of the Right Honourable the Governor in Council)

H. C. MONTGOMERY,
Chief Secretary.

Number 2307. 369

The Fort St. George Gazette.

Published by Authority.

TUESDAY EVENING, APRIL 29, 1851.

Fort St. George, April 29, 1851.

The undermentioned Gentlemen have obtained leave of absence from their Stations.

W. Robinson, Esq. Head Assistant to the Collector and Magistrate of Malabar, for two months from the date of his quitting the District, under Sections XI and XII (amended) of the Absentee Rules, to visit the Eastern Coast and the Presidency, on private affairs.

Major J. Crisp, Mahratta Translator to Government, in extension until the 11th June next.

Fort St. George, April 29, 1851.

T. A. Anstruther, Esq. Civil and Session Judge of the Zillah of Rajahmundry, delivered over charge of the Court to P. Irvine, Esq. on the 24th Instant.

ADJOURNMENT.

Civil Court of Chicacole, for six weeks, from the 20th Proximo.

Principal Sudr Ameen's Court of Vizagapatam, for six weeks, from the 20th Proximo.

Sudr Ameen's Court at Itchapoor, for six weeks, from the 20th Proximo.

The Criminal Courts will continue open as usual.

25th April 1851.

Financial Dept., Fort St. George,
23d April 1851.

Notice is hereby given that the Sub Treasurer will be supplied with Cash to discharge the Civil Allowances of this Presidency on the 6th, and the Carnatic Stipends on or about the 9th May next, both in arrear for April 1851.

By order of the Right Honorable the Governor in Council,

H. C. MONTGOMERY, *Chief Secretary.*

GOVERNMENT MUSEUM.

The Museum, at the College, is open to all Visitors, every day, Sundays excepted, from 6 to 9 A. M., and from 2 to half past 6 P. M.

College, 29th April 1851.

NOTIFICATION.

Fort St. George, April 29, 1851.

It is hereby notified for general information that the Villages of

Goomadipoondy,
Pazaya Goommadipoondy,
Caroomboocooppum,
Pareya Shozayapaukum,
Chinna Shozayapaukum,
Cooroovandachairy,
Varecaudoo,
Nungumpullum,
Peddeecooppum,
Doorampullum,
Narasingapooram,
Chinna Obulapooram,
Pareya Obulapooram,
Purnumbadoo,
Appalapooram,
Tundalacharry,
Chintalakooppum,
Yalavoor,
Culloor,
Chennaveram,
Appaveram,
Mungaveram,
Malakalanee,
Madeepolliam,
Davemputtoo,
Pareecaramboor,
Agarum,
Rettumbadoo,
Vazoodalumbadoo,
Yanadee Malepaukum,
Nuttum,
Somumbuttoo,
Keeleekodee,
Sereevaleeputtay,
Guttanum Mullee,
Enjoor,
Poongolum,
Auttoopaukum,
Tareevalee,
Tungal Paroombalum,
Goodeenelvoy,
Paupencooppum,
and
Paulaswara Cundigay,

now forming the Goomadapoondy Mahanum of the Sutwaid Talook in the Collectorate of North

In response to these requests, gifts were received at the rate of about 1,000 specimens a month. The Oriental and Screw Navigation Companies permitted their ships to bring to the Madras Museum small packages free of charge. The Army Commissariat made the cases and fittings and the Museum was thrown open to the public early in 1851.

The notification in the *Fort St. George Gazette* of Tuesday Evening, April 29, 1851, which for its historical interest is reproduced at page 7 reads:

GOVERNMENT MUSEUM

The Museum, at the College, is open to all visitors, every day, Sundays excepted, from 6 to 9 a.m., and 2 to half past 6 p.m.

College, 29th April 1851.

Lists of donations received began to be published periodically in the Gazette in 1851. The public began to come to the Museum, at first in very small numbers, from July 1851, from which month we have statistics of visitors. Visitors numbered 530 in 1851, 2,906 in 1852 and 7,170 in 1853.

Contributions received were mostly from members of the European community, but there were a few Indian donors among whom were the Rajas of Cochin and Travancore the Nawab of Carnatic and several South Indian Zamindars. That Balfour had extremely practical ends in view is shown by his letter of March 21, 1853, to the Raja of Callistry (Kalahasti):

Your Highness,

I have had the pleasure of receiving from your agent 2 specimens of the Copper of Seeta Rampoor, and beg of you to accept my best thanks for the readiness with which you have complied with my request.

I have told your agent the names of several other places where copper ores are obtainable and hope you will be able to send me specimens from each locality.

I have also told your agent what it is that I am collecting all these specimens for, and he will write and tell you all I am doing and how I have collected 17,000 specimens of stones, beasts, birds, woods, instruments and manufactures of this country and of other countries and I think that there has already been much benefit from this collection.

I have wished to tell you that there is in every part of this country great sources of wealth, which the possessors of the land are unacquainted with the value of, and allow the stones, the fibres, the woods and ores in which the wealth consists to lie around them and waste and destroy and I have no doubt that on your own property there are a great number of substances which if collected would bring in money largely to your people and yourself, and which I beg of you to direct your attention to. If you could come down to Madras just now and see the collections of articles which I have made, I think that in a week you would observe at least ten new sources of your own and your peoples' wealth, which you have never yet known or thought of. Laying as you do in the jungle you cannot learn how many sources of profit and wealth you neglect, and if you will come and bring 4 or 5 intelligent men with you, I will take care that you see all that is worthy of being seen here and introduce you to three gentlemen whose knowledge can be of use to you in any efforts which you may make to improve and develop the hitherto unknown or neglected resources of your country.

I have the honour to be,
Your Highness,
Your most obedient servant,
EDWARD BALFOUR,
Surgeon.

MUSEUM,
21*st March* 1853.

Why Balfour did not limit the scope of the Museum

In a letter, dated 30th May 1854, addressed to Oldfield, Esq., Roorkee College, Balfour explained why, in his circular, he did not set any limit to the interests of his Central Museum. He wrote, "I believe that if the Museum were *limited in its objects, it would never be formed* because the residents throughout the country, rendered, by the limiting, doubtful as to what would be acceptable, would refrain from sending anything and, if I attempted to be eclectic, I would lose all . . . Care was taken to impress upon all within this Presidency, that the basis on which the Museum was established was so broad that whatever in creation was sent, a use and place would be found for it. The result has been that articles of great value have been received from liberal donors . . . Another reason for making the basis of this Museum so wide was the conviction that if this vast country were ever to be represented, it could only be so on a scale commensurate with its own magnitude, and that a Museum of limited nature would be useless as a means of representing these provinces and quite unworthy of the Government to patronize."

Balfour did not conceal the fact that the success of his labour depended chiefly on his wide knowledge of Southern India and the friendship and acquaintances which he had formed during his marchings through and through the country. "My gun and hammer", he wrote, "were my constant companions, and there is not perhaps a cantonment or civil station where I have not some friend or acquaintance willing to aid me not only for my own account but for this Presidency's fame."

By the 9th August 1853, the Museum had a total of 19,830 specimens and though only twenty months old, could "bear a favourable comparison with the long established Museum of the Bengal Asiatic Society in Calcutta."

Museum moved to the Pantheon

The rooms on the upper floor of the College were so over-crowded that in 1853 we find Dr. Balfour asking the Government for a separate building and while this was being built he wanted the Hall of the College, which was very occasionally used for public meetings and entertainments to be given over for the use of the Museum. The latter request was not granted as Government considered that the public should not be denied the privilege which they had long enjoyed of using the College as a place for meetings, etc. But within a few months, Government were forced to a quick decision on the question of accommodation for the Museum. The upper storey of the College was damaged by the weight of the cases "having acted injuriously on the walls and beams." It was considered "most feasible and least expensive to appropriate the bulk of the Pantheon at present occupied as the Cutcherry

of the Collector of Madras." The Right Honourable the Governor himself inspected the building attended by Mr. Stokes, Acting Collector of Madras, and Dr. Balfour. And so it was decided to remove the Museum to the Pantheon and this was done in December 1854. Prof. C. S. Srinivasachari in his article on the "Pantheon Hodie" elsewhere in this volume has given the history of this building which goes back to the days of Clive in Madras. The Pantheon then consisted of two long halls and two small wings and two out-houses. Of this old structure very little remains except the plinth and a part of the ornamental floor of the two rooms where pictures are exhibited.

Local Museums

While developing the Museum at Madras, Dr. Balfour continued to ask friends at Bangalore, Bellary, Coimbatore, Cuddalore, Ootacamund, Secunderabad, Mangalore, Tiruchirappalli, etc., to start local museums on the lines suggested by General Cullen who was at the time engaged in organizing a museum at Trivandrum. His letter of November 1, 1851 to Dr. Maxwill, Garrison Surgeon of Trichinopoly, is typical of the correspondence on the subject of Local Museums:

My dear Maxwill,

The thirteen years that have passed since we were in Secunderabad together in 1838, may have rubbed me from your memory but, in the hope that I am remembered and knowing that you are still as ardent in the pursuit of science as ever I write on the subject of the Museum.

The notification of Government alludes to the desire of commencing Local Museums or repositories at the different stations of the Interior, and I have written to Dr Pearse, to Dr. Geddes and to Captain Ouchterlony asking them to stir in matter, as to Bangalore, Hyderabad and the Neilgherries.

I hope much from the two letters, but am doubtful about the first, whose reply was, to me incomprehensible as to difficulties.

You will be aware that I am not a salaried servant of the Museum but am working for love, and I hope that you will be able to set one going in Trichinopoly. All you want is to select an empty public building of which there must be many and then ask Government's permission to entertain a cleaner, a writer/or call him a Curator and to have cases made up at the Arsenal to hold the things.

The expenses ought not to exceed ten or twelve rupees a month, and if any of our younger brother Officers under you would take charge of it, a year ought to see a good Museum in Trichinopoly.

In the Minutes of Consultations of February 16, 1855, Government sanctioned the funds and the use of suitable public buildings and ordered "the chief Revenue, Judicial, Military Officers, with also the Chaplain where one is stationed will constitute themselves a Committee of Management" for the Local Museums. Government also thought that useful results from these small institutions depended on "the unbought zeal of the Officers." These local repositories were to act as feeders for the Central Museum at Madras.

By the middle of 1855, there were in all six Local Museums, attached to the Madras Museum within the Civil Province of Madras and these were at Bellary, Coimbatore, Cuddalore, Mangalore, Ootacamund and Rajahmundry. Within the limits occupied by the Madras Army there were in addition to the above six, three other Museums, at Singapore, Jubbulpore and Trivandrum. In his circular letter of instruction issued to the Committees of the six Local Museums, Dr. Balfour adverted to the educational and economic potentialities of the Museums: he suggested that the English word "Museum" should be used to name the institutions as there was no Indian equivalent for that word and a manufactured name may lead to error and perhaps even create prejudice.

These Local Museums in the districts, which were started with such high hopes received little support and attention. Five were closed down by 1861, the last one to disappear being the one at Rajahmundry in 1875.

The Museum Zoological Gardens

For a month or two in 1854 a young cheeta and a young tiger were kept in the Museum and visitors came to see them from distant villages. The sudden decrease in the number of visitors on the removal of these animals induced Dr. Balfour, as an experiment, to request His Highness the Nawab of Carnatic to send to the Museum all wild animals in his possession. The results of the temporary exhibition in May-June 1855 of live animals were very satisfactory. By the first half year of 1856, the Madras Museum had a Zoological Garden with 360 animals. A notification similar to that of 1851 was issued on 20th September 1855 asking for donations of animals to the Museum Zoological Gardens. The mortality among the animals was great and their prices were always high; for a giraffe, for example, Dr. Balfour paid Rs. 500. The trouble and expenditure were both worth while because at a per capita cost of three pice or one farthing, 600,000 visitors were furnished with the cheapest gratification. A curiosity in the form of a white (albino) elephant was temporarily exhibited in the Museum Zoo in December 1858. In 1863, the City Municipality took over the Zoological Gardens and removed it to its present site in the People's Park.

Visitors to the Museum

As Dr. Balfour wrote in 1855, prior to the institution of the Museum, there did not exist any place of recreation in Madras where all classes of the community could go for amusement. "The only places which they might have freely visited were the Agri-Horticultural Society's gardens and the practising of the bands on the beach. But to neither of these do any Natives or anyone indeed except the richest of the East Indians and Europeans ever resort." It was therefore "a great result" to find thousands of the

community visiting the Museum every month. Before the starting of the Museum there were no means of imparting instruction in any branch of Natural History, but now (1855) the Museum had ample material for teaching mineralogy, palaeontology and about Molluscous animals and vertebrate zoology.

For comparing the number of visitors to the Madras Central Museum with those visiting English institutions of a similar nature in London, Dr. Balfour had culled the following figures :—

	Year.	*Number of visitors.*
Royal Zoological Gardens, London	1854	407,676
Kew Gardens	1855	318,818
British Museum	1855	347,683
Madras Museum	Year ending June 1856.	368,873

The total expenses of the Madras Museum in 1856 were about Rs. 10,000 or £1,000 while for the year 1856–57, the British Museum spent £85,643.

The great increase in the number of visitors was on account of the novelty and popularity of the animals in the Museum Zoological Gardens : and the number fell when the Zoo was transferred to the People's Park.

The popularity of the Museum was something which Dr. Balfour, in spite of his love and knowledge of the local people, could not anticipate. "Even acknowledging it to be the duty of all Governments to provide amusement for the people, it must be a source of much gratification to observe how largely the native residents of the City avail themselves of the Liberality which has established the Museum and allowed their free admission to it. Of the visitors two-fifths are native women, most of them clad in good apparel. . . They linger over curiosities, particularly those of Native manufacture, and that which seems to afford the greatest enjoyment is the Zoological Department and particularly the Reptiles." Visitors came to the Museum in all sorts of carriages and made a good deal of noise. The noise in the Museum offered a striking contrast to the quiet that prevailed in European Museums

The servants of the Museum establishment were "strictly forbidden to speak to the visitors or in any way interfere with their free action." This was considered requisite in the Museum to "avoid alarming the native women." By 1859, Dr. Balfour believed that the Museum had established its popularity and won the confidence of the local community. The admission to the Museum has been throughout free and Dr. Balfour resisted all suggestions for the levy of an admission fee. On April 15, 1856, he told Government that the public had earned their free admission to the institution by their liberal donations to it.

Staff, Sections and Publications of the Museum

Dr. Balfour started with one writer. By 1859, he had a Curator, an Assistant Curator, a Writer and a Librarian and record-keeper, seven hamals, three animal mounters, three gardeners and eight animal-keepers for the Zoological Gardens, the total monthly cost of the establishment being Rs. 239-8-0.

The departments of the Museum were as follows :—

(1) Natural History, with Zoological Gardens.

(2) Geographical Geology.

(3) Economic Geology.

(4) Public Library (added in 1853)

The following is the list of catalogues, reports, etc., published by the Museum during Dr. Balfour's time :—

1 Report on the Government Central Museum, its origin and objects ; 6th January 1853. 8vo pages 36. *Price one rupee.*

2 Report on the Government Central Museum, on the Marbles of Southern India ; 1st January 1854. 8vo pages 49. *Price one rupee.*

3 Report on the Government Central Museum, on the Iron Ores, the Manufacture of Iron and Steel ; with notices of the Coals of the Madras Presidency ; 30th January 1854. 8vo pages 242. *Price one rupee and four annas.*

4 Appendix to the Report on the Iron Ores, and on the Iron and Steel of Southern India ; 18th March 1856. 8vo pages 52. *Price eight annas.*

5 Reports on the Government Central Museum ; on the progress of the Institution, and on the new Museums in the provinces ; 1st January and 1st July 1855. 8vo pages 50. *Price one rupee.*

6 Report on the Woods and Trees of the City of Madras ; 1st April 1856. 8vo pages 14. *Price one rupee.*

7 Report on the Government Central Museum ; 1st July 1856. Containing Mr. Taylor's Report on the Elliot Marbles, Report on Museums in the provinces, and Report on the Mineral substances of Southern India, useful as grinding, polishing, and sharpening materials. 8vo pages 200. For sale by Messrs. Pharoah & Co. *Price two rupees and eight annas.*

8 On the Gutta Percha of Southern India ; 22nd April 1856. 8vo pages 8. *Price one anna.*

9 Memorandum on Imphee and Sorgho dated January 1859. 8vo pages 6.

—*Reports, in 8vo pages* 733.

10 Catalogue of the Aqueous Rocks as Mineral Structures : Palaeontology or Catalogue of the Aqueous Rocks and their fossils in the order of their superposition : Madura, its Rocks and Minerals ; and Geology of Tinnevelly, 2nd March 1855. 8vo pages 84. *Price one rupee and eight annas.*

11 Catalogue, Palaeontology, Part II ; 10th August 1855. 8vo pages 75. *Price one rupee.*

12 Catalogue, Palaeontology, Part III ; 31st May 1857. 8vo pages 8. *Price one rupee and eight annas.*

13 Catalogue of British Shells in the Museum ; 26th May 1855. 8vo pages 9. *Price one rupee.*

14 Catalogue of the Shells in the Museum ; 17th April 1856. 8vo pages 57. *Price one rupee.*

15 Catalogue of the Minerals in the Museum, illustrative of the physical and chemical characters of Minerals ; 10th August 1855. 8vo pages 47. *Price one rupee.*

16 Catalogue of Minerals. Part II containing Minerals used in Metallurgy and the Arts, Minerals entering into the Composition of Rocks, Minerals used as Gems. Gems in their natural state, and Catalogue of the Minerals, Part III, containing Minerals to illustrate Systematic Mineralogy ; 30th June 1857. 8vo pages 144. *Price two rupees.*

17 Catalogue of the Library of the Museum; 17th April 1856. 8vo pages 20. *Price one rupee.*
18 Catalogue of the Iron Ores, etc., of Southern India, and of samples of the Iron smelted and manufactured from them; dated 25th September 1857. 8vo pages 61. *Price eight annas.*
19 Catalogue of the Hypogene and Volcanic Rocks in the Museum; dated 26th March 1858. 8vo 36 pages, 83 to 120. *Price one rupee.*
20 Catalogue of the Mollusca of Southern and Eastern Asia, in the Government Central Museum dated 31st May 1858. 8vo 10 pages, 59 to 68. *Price eight annas.*

—*Catalogues, in 8vo pages* 727

Captain JESSE MITCHELL

Part-time Superintendent (1859–1872)

When he was about to relinquish charge of the Museum, Dr. Balfour had in view Dr. Blyth of the Calcutta Museum as a possible successor of his, but Government refused him permission to enter into correspondence with Dr. Blyth on this subject. Lieutenant (later Captain) Jesse Mitchell, an army Officer, who was then working in a civil post as Commandant of the Madras Mounted Police was appointed to succeed Dr. Balfour on May 15, 1859. I have been able to get very few biographical details concerning Captain Mitchell and for what I have got, I am obliged to two of his grand-daughters who are in India. Mitchell was born in 1812 at St. Mary's Whitechapel, Middlesex, England, and at the age of nineteen, he enlisted in the army; he served with the China Expedition of 1842. Before he came to the Museum, he was keenly interested in microscopy and natural science. He died on July 18, 1872, after a period of illness while still in service and was buried in the St. George's Cathedral, Madras.

The Museum Library

Captain Mitchell was a steady, modest and hardworking person who, though he did not claim anything like the eminence and versatility of Dr. Balfour, had very clear ideas of the functions of the Museum: " first to contain as complete a collection as possible of the natural production of the country (in particular) and other parts of the world, duly named and systematically arranged as a means of encouraging the study of Natural History and secondly, to do its share in the advancement of science." A library was therefore quite essential and so in 1860 he asked Government for funds for a reference library. Regarding the library he wrote: " Education is advancing with rapid strides in India and to the young men now growing up, such a library as I propose to place at their command would be a great blessing.

Captain Jesse Mitchell, Part-time Superintendent (1859–1872)

A few hundred rupees, judiciously expended every year, would place before the public a library of reference that would in the course of time be an honour to the Government." Captain Mitchell started purchasing books, mostly second hand for the sake of economy, with the help of a scientific friend of his, books on applied sciences being specially favoured. Captain Mitchell might be regarded as the originator of the Connemara Public Library, for it was from the Museum Library which he commenced in 1860 that the Connemara Public Library developed. The Museum Library was thrown open to the public in June 1862; admission to it was free but regulated by tickets. The scope of the Museum collections continued to be as wide as it was in the days

of Dr. Balfour. Captain Mitchell, in fact, followed very scrupulously in the footsteps of his distinguished predecessor. Collections in Natural History continued to be on an international scale, from Europe, Australia and even America. Among the interesting collections received during Captain Mitchell's time were a series of casts of British fossils and six specimens of stone and four specimens of iron aerolites in return for the Parnallee and Nellore aerolites presented by the Madras Government to the British Museum (1862). Shells, fish, birds, insects and fossils came from several museums in exchange for similar material sent from Madras. Major Michael secured in 1865 for the Museum the femur, tibia and tarsus of *Diornis*, a rare huge bird, from New Zealand. Two elephant skeletons were secured for the Museum in 1866 through the initiative and interest taken by the Governor when at Ootacamund where the animals died.

The Museum Herbarium was built up by contributions made particularly by Colonel Beddome of the Forest Department who seems to have been a good friend of Captain Mitchell's.

The collection of models of machines continued, some examples got by Captain Mitchell being the model of a high pressure steam engine (gift, 1860) and an oscillating air pump.

The Museum had, up to 1865, only a very small collection of coins. Captain Mitchell began to add to this small collection and to collect medals illustrative of the history of the Madras Army.

In 1861 began the contacts between the Madras Museum and Robert Bruce Foote of the Geological Survey of India. To Foote's work for the Museum and the Foote collection of Prehistoric Antiquities which the Museum purchased, reference will be made later on.

In 1865, the Tanjore armoury was transferred to the Museum from the Arsenal, Fort St. George, after prolonged correspondence spread over thirty months. Captain Mitchell also continued the efforts begun in 1854 by Dr. Balfour to secure more of the Amaravati sculptures for the Madras Museum. In 1861, the transfer of the animals of the Museum Zoological Gardens started, but the Museum continued to have some of the smaller animals till 1863. In 1862, addition to the Pantheon Buildings of an upper storey, residential quarters for the Officer-in-charge and the raising of his allowance from Rs. 100 to Rs. 300 per mensem, were sanctioned. The Officer-in-charge was, from this time, called Superintendent. This upper storey of the Pantheon Buildings was completed in 1864.

Ever since the commencement of the Museum, the hours of opening the Museum were from 6 a.m. to 6 p.m. on all days except Sundays. From February 1, 1866, Captain Mitchell had the time changed to 9 a.m. to 6 p.m.

Captain Mitchell added during his tenure of office no less than 72,009 specimens to the Museum. His main work as a police official took a great deal of his time; heavy demands were made on his time for microscopic examination of a variety of substances; and since most of the material for the Museum had to be got by exchange, collection work of local material for exchange and the correspondence were both very heavy. His achievements for the Museum, in spite of several handicaps, were substantial. His contemporaries, including the Governor who was a constant visitor to the Museum, appreciated his work. I understand from Captain Mitchell's grand-daughter that the horse of which the skeleton is now exhibited in the Museum was Captain Mitchell's regimental charger.

Surgeon GEORGE BIDIE, M.B., C.I.E.

Part-time Superintendent (1872–1884)

Dr. George Bidie assumed charge of the Museum on August 7, 1872, the Curator, Mr. P. Rungasawmy Moodaliar having been in charge temporarily for a few weeks after Captain Mitchell's death. Dr. Bidie had at the same time conjoint charge of the post of Secretary and Statistical Officer to the Surgeon-General. Of his personal qualities, I have not been able to get any contemporary information, but from his voluminous correspondence of twelve years as the head of the Museum, I get the impression that he was quietly efficient, devoted to his favourite subjects, botany and pharmacology, keenly interested in making South India agriculturally more efficient and equally eager in spreading scientific knowledge through the agency of the Museum. Over the question of the arrangement and display of the Amaravati marbles in the Madras Museum (1884-85), he had to cross swords with no less a person than Burgess of the Archaeological Department of the Government of India, but while the distinguished archaeologist demonstrated more of dogmatism and heat, Dr. Bidie showed himself that he was the master of the situation and what he did was the only practicable way of dealing with the sculptures. Dr. Bidie will long be remembered in this State for his special work on cinchona cultivation. He was a member of the Government of India's Cinchona Committee. As he was the leading botanist and pharmacologist of his day in Southern India, his advice was eagerly sought by businessmen, planters, and horticulturists. In a letter, for example, to the Superintendent of the Lal Bagh Gardens, Mysore State, Dr. Bidie gave him suggestions about the commercial cultivation of a number of medicinal plants. In other letters,

Dr. George Bidie, M.B., C.I.E., Part-time Superintendent (1872–1885,

he explains to medical correspondents the use of datura for the dilation of the pupil of the eye and the use of the root-bark of pomegranate as a remedy against worms. We find him sending seeds and seedlings of cinchona and coffee to Australia and to the Livingstone Mission in Africa so that these useful plants may be introduced to the Africans. Attempts are being made now to popularize the cultivation of cocoa in Southern India, but about eighty years ago Dr. Bidie tried hard, but in vain, to induce planters to take up cultivation of the plant, which he grew experimentally on the Museum grounds. Other subjects that interested him and to which he made significant contributions were grasses suitable for paper manufacture, control of cactus by the

cochineal insect, cultivation of chaulmoogra and preparation of vegetable dyes. Dewan Rama Iyer of Travancore consulted Dr. Bidie about paper manufacture. Kew sought his help for the investigation of dye stuffs and the Madras Board of Revenue for the manufacture of red ink from indigenous raw material and on sand binding plants suitable for the reclamation of waste lands. Dr. Bidie thought *Casuarina equisetifolia* was very useful for the last purpose. Dr. Bidie gave a recipe for a very lasting and cheap red ink, but the Board gave it up because the imported powder gave a brighter ink. The bright writing would not last long, but in the view of the Board that did not matter.

The following biographical particulars are extracted from the "Dictionary of Indian Biography" by Hayavadana Rao :—

> *Bidie, Surgeon-General George, M.B., C.I.E.*—Hon. Surgeon to Viceroy of India (1887); Hon. Surgeon to the Queen, 1898; Hon. Surgeon to the King, 1901; Surgeon-General, Madras, 1886-90: b. Buckies, Banffshire, 1830: m. Isabella (d. 1906) d. of Alex. Wiseman, Banchory, Aberdeenshire, 1854: two s. five d. Educ. locally and at Aberdeen Grammar School: M.B. 1853: L.R.A.S. and L.M., Edinburgh, 1853: Fellow of and late Pres. of Medical Faculty, Madras Univ. F.Z.S.; Mem. of the Board for Civil Service Exams., Madras: Appointed to the Madras Medical Service, 1856: Served with Madras Artillery and 12th Ryl. Lancers, 1856-58: 1st Infantry Hyderabad Contingent, 1858-60; on Field Service, Mutiny (medal and good service pension). Professor of Botany and Materia Medica, Madras Medical College; Superintendent, Lunatic Asylum, Madras, 1866-70: Secretary and Statistical Officer, 1870-83: with conjoint charge, Government Central Museum: to which he got added a Free Public Library, 1872-85: Deputy Surg.-Gen., and in charge of British Burma Division, 1881: Sanitary Commissioner, Madras, 1885-86: Surg.-Gen., 1886: decorated for the discovery in 1867 of a preventive for an insect pest which threatened the extinction of the Coffee Plantation in Southern India: Member of Madras Committee for framing scheme of technical education. *Address*: Carmore, Bridge of Allan, N.C.: Madras Club. Recreations: Zoology, Botany and Angling.

Botanical Section strengthened

While geology was the chief field of activity during Balfour's time and zoology during Captain Mitchell's time, botany gained most during the period of Dr. Bidie's stewardship of the Museum. Medicinal plants, plants of economic importance, and rare exotic trees, such as the Japanese lacquer tree were several of them actually grown on the Museum grounds where Dr. Bidie also tried several forest conservancy experiments on a small scale. Most of these trees were felled later on, but a few still survive to this day. The Museum had a herbarium-keeper and also an artist to draw medicinal plants for Dr. Bidie's monograph on medicinal plants. In 1873-74, the Herbarium was enriched by the purchase of Lieutenant-Colonel Beddome's herbarium at a cost of Rs. 1,500. The collection contained 2,435 specimens, most of which were rare plants. A good collection of forest

products specially made and labelled under the supervision of the Director-General of Forests was added to the Botanical section in 1878. The Madras Museum Herbarium became famous and well-known at Kew. A libellous criticism that it was not maintained properly was set afloat by some interested persons in England and the Secretary of State ordered an enquiry and the Officer reported that it was as well maintained as any herbarium in Europe.

Ethnology and Antiquities

Dr. Bidie was a Corresponding Member of the Italian Society of Anthropology and Ethnography; and he included ethnology as one of the subjects to be illustrated by Museum collections. The Government had instructed all district authorities to render assistance to the Superintendent of the Museum in regard to the archaeology of the various districts. The collection of pottery, etc., from the ancient burials of the Nilgiris, now known as the Breek's collection, reached the Museum in 1878. Sculptures such as a large Buddha image from Tirunelveli, further lots of sculptures from Amaravati, photographs of tumuli from Salem (1873–74) and from Coimbatore (1877–78) and burial pottery from these early monuments began to come to the Museum. The nucleus of the large collection of copper plate grants was built up during his period. Dr. Bidie became a very keen numismatist and the collection of coins began by Captain Mitchell was considerably enlarged by him. His paper on *Varahas* continues to be of interest even today.

Foote, the father of Indian pre-historic archaeology, made his first discoveries of early man in the valley of the Corteliar river during this period and the Madras Museum received some of these finds as gifts.

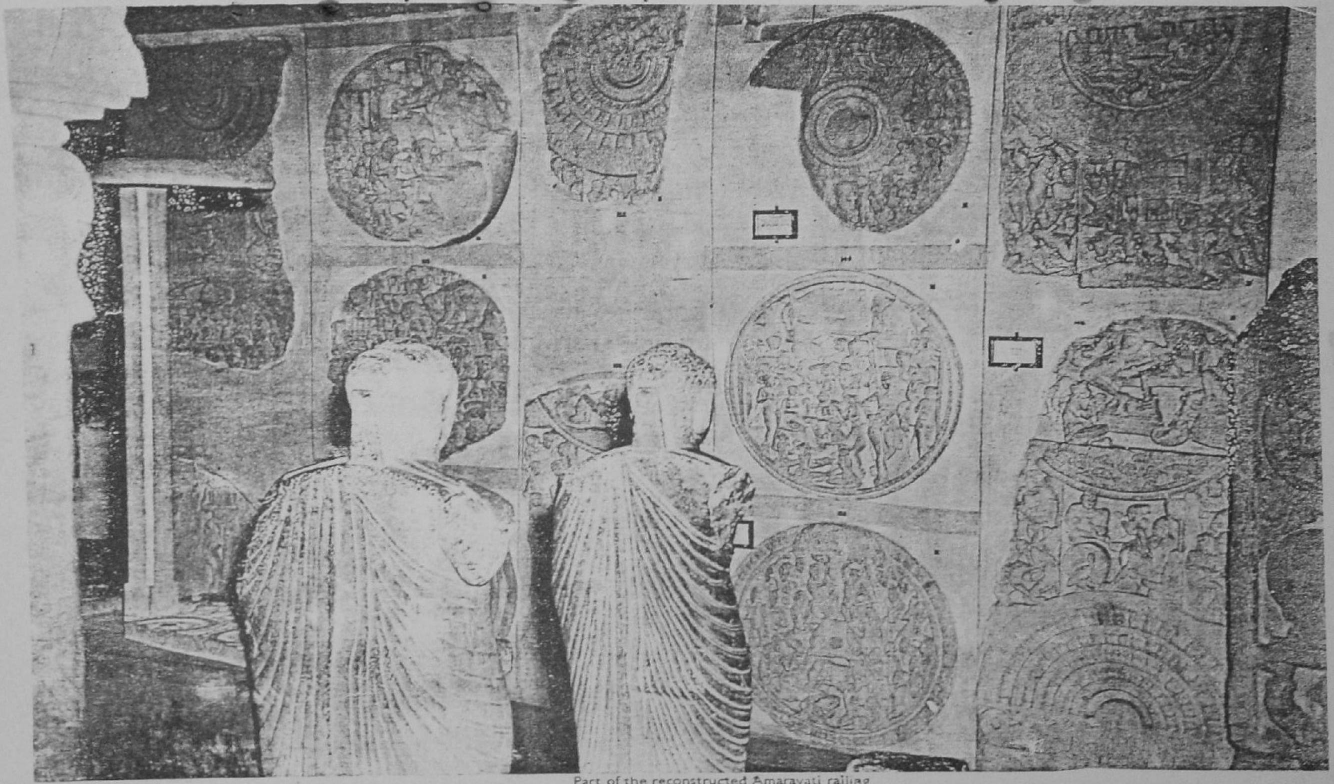
Amaravati marbles exhibited

The famous Amaravati stupa was discovered by Colonel Mackenzie about the year 1801. In 1830 some of the sculptured slabs were brought to Masulipatnam to beautify a pettah named after Robertson, the District Collector. During the course of his visit to this place in 1835, Sir Frederick Adam, Governor of Madras, saw the slabs and ordered that these should be sent to Madras to be preserved in the Museum of the Madras Literary Society. Dr. Balfour, soon after taking charge of the Madras Central Museum, began his efforts to get the slabs to Madras and the first batch arrived here in 1856 and, in 1859, most of these were sent to Her Majesty's Secretary of State for India and lodged in the India Museum. Other batches of sculptures were secured during Dr. Bidie's time and they were set up in their present location in the Museum.

The task of arranging these heavy and delicate sculptures in a hall too small for them was by no means an easy task. A senior engineer of the Public Works Department was placed on special duty for some months for this work. Dr. Bidie has described the work as follows :—

The Amaravati Sculptures, the receipt of which was noticed in last year's report, were erected in the Antiquity room and form very conspicuous and attractive additions to the Museum. Most of the marbles received belonged to the outer rail of the tope, and an attempt was made to set them up in a position similar to that which they probably occupied in the original structure. This owing to their brittle nature, great weight and mutilated condition was a task of much difficulty and caused some anxiety, but all difficulties were successfully overcome by the care and skill of Lieutenant-Colonel Morant, R.E., who took very great interest in the work. Of the sculptures of the inner rail only one large stone and some fragments were received, and with such materials it was impossible to attempt the restoration of any part of the outer rail. Accordingly, the large sculpture was set up in a favourable position as to light in the wall of the room, and enclosed in a handsome teak frame which will permit of the carving being covered with glass should that at any time hereafter seem necessary. This specimen of the Buddhist sculptor's art is by far the finest and perhaps the most interesting of any hitherto recovered from the ruins of Amaravati. It measures 5 feet 8 inches by 5 feet 6 inches and gives in bold relief a representation of the dagoba and its rails in their pristine glory, so that it is extremely valuable from an archaeological as well as artistic point of view. Of the slabs which adorned the lower part of the dagoba itself only a few were received, and these were put up on a brick-work structure shaped so as to give some idea of their original position. The tope of Amaravati was probably erected early in the 4th century of the Christian era, and some of the slabs have carvings on the back which show that they belonged to some structure of much older date. The finer sculptures now existing were evidently executed by artists from Northern India and show traces of classical interest. When Hioun Thsang, the Chinese pilgrim, visited the place in A.D. 639, the tope still existed in its original splendour although it had been deserted for a considerable time. Its destruction must therefore have been begun at a later date, and for a long period it has been in a state of absolute ruin. The remains are now, however, carefully guarded by Government, and an interesting monograph on them by Dr. Burgess, C.I.E., of the Archaeological Survey has been published at the Government Press.

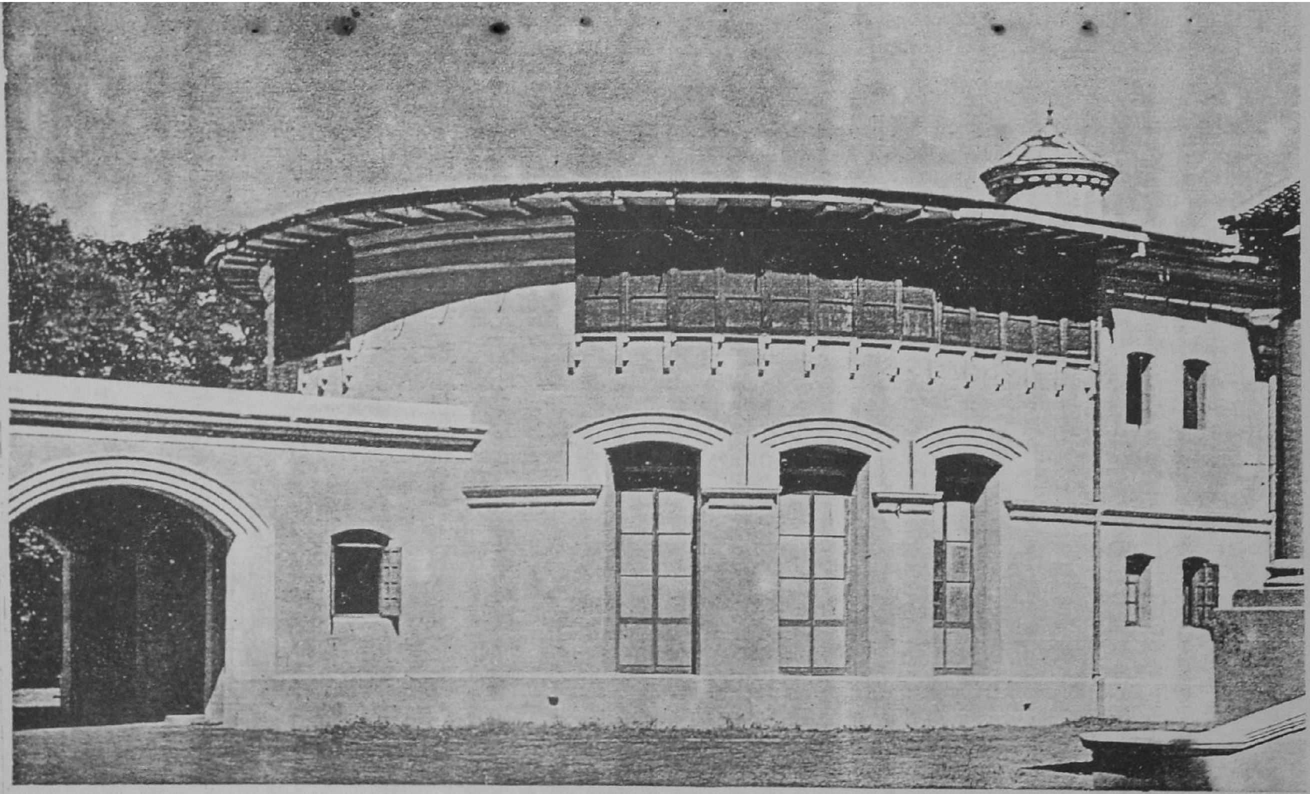
Dr. Bidie's attempt to reconstruct the railings of the Amaravati was severely and vituperatively criticized by Dr. Burgess of the Archaeological Survey. The chief points of criticism were that the slabs have been wrongly placed, that it was wrong to use Portland cement and the alignment of the wall across the hall cut off light. Burgess, perhaps, thought that commonsense in these matters was a prerogative of professional archaeologists ! Bidie answered effectively but without heat that no one would be in a position to reconstruct the wall, because only a small percentage of slabs that originally made the stupa have survived destruction and reached the Museum. So far as interference with light is concerned, it is doubtful if any other alignment would have allowed so much light to fall on the sculptures. The Government of Madras fully concurred with Dr. Bidie and thus gave Burgess his due. It was of course wrong to build a large number of sculptures into the walls, below and also far above eye level, but Burgess did not bother about this point.



Part of the reconstructed Amaravati railing

The Museum acquires a whale skeleton

Surgeon-Major M. C. Furnell, F.R.C.S., officiated as the Superintendent of the Central Museum for about eighteen months from June, 1874 during Dr. Bidie's absence on sick leave in Europe. The important event of the year 1874 was the acquisition of the skeleton of a whale for the Museum. "This enormous sea mammal was cast on shore near Mangalore, and, with characteristic energy, was at once secured by Mr. Thomas, the Collector, and carefully deprived of its flesh for conversion into a skeleton for the Museum. The bones reached Madras, having been brought round by a vessel of the British India Steam Navigation Company free of charge. The thanks of the Government were conveyed to Mr. Thomas and the Agents of the British India Steam Navigation Company in December 1874. The bones were under maceration in a pit dug for the purpose during the entire cold weather, and the enormous quantity of oil and a cetaceous-like matter which they contained gradually eliminated. Now that the hot weather has commenced, the process of mounting the skeleton is being rapidly pushed on. This casting on shore of the body of a whale, strange as it may appear in a tropical climate, is not without precedent. In the Museum are several vertebrae and portions of the jaw bones of a whale sent by Mr. Thornhill from a whale cast on shore near Masulipatnam in October 1864. During Lord Napier's Government there was in the verandah of the Aide-de-Camp's bungalow at Guindy a large bone which very much excited my curiosity and which Lord Napier allowed me to send to the Medical College Museum. No one in Madras could determine exactly what it was, and a sketch of it, with a description of its dimensions, sent home by me to Professor Fowler, the famous osteologist of the Hunterian Museum of the College of Surgeons, failed to elicit any useful information. I see now it is a portion of the occipital bone of a whale's skull, but very old and much worn ; it thus becomes evident that from time to time the body of a whale is cast on the shores of India ; the probability is that the dead body of a Cape or South whale, of which large quantities during the months of June, July and August are seen about the Cape of Good Hope and False Bay, may from time to time be drifted up by the current of the Indian Ocean as far north as the shores of India. Since writing the above, Captain Taylor, the Master Attendant, informs me he has often seen whales in the Indian Ocean. It is a great prize of which the Museum may well be proud. In Europe I only know of two such skeletons—one in the Museum in Edinburgh, mounted by Knox, the anatomist, which I have seen, and one I read of as being in the great Museum of Comparative Anatomy at the *Jardine des Plantes* at Paris. The famous Hunterian Museum in Lincoln's-Inn-Fields contains no such skeleton."



The Museum Library Block, 1875

New Library and Lecture Hall

The Library and Lecture Hall, begun in December 1873, were completed in 1875 and were formally opened by His Grace the Governor on March 16, 1876. Dr. Bidie was happy over having those "commodious, elegant and convenient" buildings. Fine sets of maps and pictures of archaeological interest were hung up in the Library. The public of Madras were appreciative of this new amenity. (When the Connemara Public Library buildings were completed in 1896, this Library with its fittings and the Lecture Room housed the Oriental Manuscripts Library till 1935. When the latter moved into the University Library Buildings in Chepauk, the Museum again got the use of the old Library buildings. Parts of the Centenary Exhibition are being held in this old Library and Lecture Room.)

International Exhibitions

During Dr. Bidie's tenure of office, the Museum participated in several important international exhibitions at Paris (1878), Sydney (1879), Melbourne (1881), Amsterdam (1883) and London (1883). These exhibitions threw a very severe burden on the staff, but always helped the Museum to add something more to its own collections. For the Paris Exhibition 30,000 specimens were collected and labelled. But these efforts and extra burdens were never in vain; for example, after the Melbourne Exhibition, Dr. Bidie observed that "a demand has arisen in Australia for various raw products and local manufactures." It is interesting to note that among the exports from Madras to New Zealand in 1882 were some mongooses to control rabbits which had become a pest in that country. About another Exhibition held at Calcutta in 1883, Dr. Bidie observed, ". . . the only appreciable result of the Exhibition was to enable a few private individuals to complete their collection of Indian curiosities!"

Public Lectures at the Museum

From 1873, free public lectures began to be delivered under the auspices of the Museum. Some of the subjects were—

"Coal measures of the Madras Presidency" by Dr. King.

"On sight" by Dr. Furnell.

"Articulating Telephone" by G. K. Winter, Esq. (The lecture had to be repeated in the Old College Hall, because the large audience could not be accommodated in the small kerosene-lighted Museum hall.)

"Cooking stoves fed by mineral oils" by Major Herbert.

"Ancient Commerce of India" by Dr. G. Oppert.

"What can be done to prevent the recurrence of smallpox in Madras?" by Surgeon-General G. Smith, M.D.

"Practical Botany" by Surgeon-Major G. Bidie, M.B.

"The Madras Harbour" by W. Parkes, Esq.

"Submarine Telegraphy" by C. Michie Smith, Esq.

"Stone implements as evidence of pre-historic man" by R. Bruce Foote, Esq.

The lectures were "well appreciated by the public, as the room was generally full and sometimes crowded. The audience, as a rule, consisted of about equal proportions of European ladies and gentlemen and of educated native gentlemen and students."

Ghosha Day

During 1878, "a good many requests were received from Mahomedan gentlemen to allow the ladies of their families to see the Museum in seclusion." It was arranged to set apart the afternoon of the first Saturday of each month for Ghosha ladies, when women attendants were placed in charge of each room. (This arrangement was discontinued from 7th April 1951 as it was found that more Ghosha women were coming on ordinary days than on the special day set apart for them.)

The Museum Taxidermist wins laurels

The Head Taxidermist of the Museum, Mr. Anthony Pillay, won a silver medal at the Fine Arts Exhibition held in England for a group of birds and reptiles prepared by him. In 1877, he won another silver medal for "preserved fish specimens" from the Maritime and Piscatorial Exhibition held at the Royal Aquarium, London. Mr. Anthony Pillay was internationally recognized as one of the best taxidermists of the day and his work was appreciated by His Royal Highness the Prince of Wales (*see* Appendix I p. 145).

Vigilance over the interests of Madras

In his letter, dated January 1, 1878, Dr. Bidie raised the question of protecting the export of antiquities from India by travellers from Europe who were carrying off valuable collections. He also stressed the need for the Museum collecting antiquities, sculptures, and art objects more vigorously than it had done in the past.

In 1880-81, Dr. Bidie invited the attention of the Government to the increasing destruction of birds for the sake of their feathers for export for decorative purposes to Europe. The value of such skins exported from Madras in 1880 was Rs. 2,821. The persistent destruction of insectivorous

birds would have disastrous effects on agriculture. It appears that no effective action was taken by the Government on the suggestions made by Dr. Bidie to meet the evil of indiscriminate destruction of useful birds.

In letter No. 10 of 1883, he discussed the problem of the Imperial Museum versus the Presidency Museum. A suggestion was made from Calcutta that the best museum material from all parts of India should find their repository in the Imperial Museum. "I look on the Madras Museum" wrote Dr. Bidie "as an educational agent and that chiefly, and next to that it ought to exhibit the natural products of the country and their ethnology. . If we have an Imperial Museum at Calcutta what benefit would the Madras folk derive from it? Mr. Anderson (Superintendent, Calcutta Museum) of course wants to magnify his office." He resisted, as did Balfour before him, the efforts from other quarters to make the Madras Museum a feeder to any bigger museum, and maintained that the status of the museums in the three large presidency towns should be as high as possible and their scope, the widest.

On Visitors

Dr. Bidie had some very shrewd observations to make regarding visitors. By 1879, a certain amount of apathy towards the Museum had perhaps arisen among the European residents of the city, for says Dr. Bidie in 1879, "the Madras Museum is much better known and appreciated in Vienna, Berlin, America and London than by the European residents of the city of Madras." So far as the general population was concerned he observed, ". . . the Museum is the most popular public institution in Madras and there can be no doubt that its popularity and utility will increase as the education of the lower classes advances" (1881-82).

Dr. Bidie was made C.I.E. in 1884. He relinquished charge of the Museum in 1885.

The following are Dr. G. Bidie's publications :—

1866 The Timber Trees of India (Madras, Gantz Brothers).

1869 Report on the Ravages of the Borer in Coffee Estates: with a Review of the Existing Systems of Coffee Culture.

1873 Lists of Articles from the Government Central Museum, Madras, presented to H.R.H. the Prince of Wales.

1874 Report on Neilgherry Loranthaceous Parasitical Plants destructive to Exotic Forest and Fruit Trees (Government Press).

1874 Catalogue of Gold Coins in the Government Central Museum, Madras.

1877 Catalogue of Mammals in the Government Central Museum, Madras, with a brief sketch of the Anatomy of Vertebrates.

1878 Catalogue of the Raw Products of Southern India, collected and forwarded to the Paris International Exhibition of 1878.

1879 Catalogue of the Commercial Products of Southern India, forwarded to the Sydney International Exhibition.

1879 Native Dyes of Madras.

1880 Catalogue of articles collected and forwarded to the Melbourne International Exhibition of 1880.

1882 Note on White Ants. *Nature*, 1882.

1883 Catalogue of the articles of the Madras Presidency collected and forwarded to the Amsterdam International Exhibition.

1883 Pagoda of the Varaha Coins of Southern India. *Journal of the Asiatic Society of Bengal.*

1883 Sand-binding Plants of Southern India.

1883 Handbook of Practical Pharmacy. Foster & Co.

Characteristics of the Period

What strikes attention, particularly by its contrast with conditions in recent times, as characteristic of the first three decades of the history of the Madras Central Museum, is the markedly high level of inter-departmental co-operation. During Balfour's days, the Commissariat had only to be asked to make cases or set up heavy exhibits and the work was done with a promptness unknown in these days of rapid means of communication. The Collectors of the districts did a great deal of the collection work of the Museum. For the very large number of International Exhibitions in which the Museum participated, specimens of raw products and products of local industries were sent to the Museum, on the demand made by the Museum. The Government saw to it that the Museum with its small staff and limited funds received all the help that district officers of the various departments of Government could give and they seemed to have had the time and also men for these extra-departmental demands.

Correspondence in those days was remarkable for its courtesy. We might regard the style as long-winded, but we seem to have lost the dignity and courtesy that were the very breath of the nineteenth century communications. An exchange of letters between Dr. Balfour and the Collector of Tanjore wherein the question of etiquette was raised would make interesting reading to the present generation of Government officials.

Loyalty to the Government of the day is a sentiment which finds expression in several of the letters which I have read through in the old volumes of correspondence in the Museum. "For the glory of the Government whose servants we are", "*credit of the Government*", "*liberality of the Government*" are expressions which, not unoften, are used when reference is made to a good piece of Government work. We do not know whether the officials were so loyal as they were all members of the ruling race and class or whether the leading men who constituted the Government elicited this loyalty. It is quite clear that the contacts between the men at the Museum and the top-ranking administrators from the Governor down were closer in those

days than during the last three or four decades. Dr. Balfour, for example, invited all heads of departments, to visit the Museum in 1855 and offer their suggestions for its improvement, which all of them did.

Dr. EDGAR THURSTON, C.I.E., F.R.C.S.,

Superintendent (1885-1908)

Dr. Edgar Thurston who relieved Surgeon-Major Bidie on October 12, 1885 was a medical man, but as he was in charge of the Museum at King's College, London, before he came to Madras, he was, unlike his predecessors, a professional Museum man. I have been able to meet some elderly people in Madras who as young men had met Dr. Thurston. He was tall, lively and sociable and altogether a very important person in Madras Society whether at the exclusive Madras Club, the Madras Dramatic Society or the Fine Arts Society of Madras. Several visitors to the Museum at the beginning of the present century remember witnessing Dr. Thurston inviting people to be measured in the Anthropometric Laboratory in the large room in front of his office (now housing the ethnological reserve collection). Dr. Thurston is now best known not for what he did for the Madras Museum but as the author of the seven volumes of "Castes and Tribes of Southern India". As a first effort in bringing together a vast body of ethnological information, these volumes are still valuable, though badly needing revision. Many university men of the older generation in Madras who studied Anthropology for their M.A. degree also remember his very clear exposition of the subject. His other works such as the investigation of pearl fisheries, the organization of the Madras Aquarium which became indeed very famous and his services as the Chairman of the Madras University Library Committee are nearly forgotten.

Change of Policy

The first official act of Dr. Thurston was to reverse the policy of his predecessors in respect of the scope of the Madras Museum and to declare that it should be limited to the archaeology, natural history, ethnology, arts and crafts, etc., of the Madras Presidency. He set about the task first of reducing the international collections relating to geology and natural history to a provincial collection. The extra-Indian material were stored away or given away to other institutions. The collection of Gandhara sculptures were returned to Lahore, the European fossils to the Presidency

ollege, the models of machines to the College of Engineering and so on. His reasons were :

It is wholly beyond the power or scope of the presidential museum to rival the great national museum in the possession of representative collections from different quarters of the globe, and I have determined to devote my entire attention to the natural history, arts, ethnology, manufactures and raw products of Southern India, accepting only such specimens from other regions as may be sent as donations from time to time, and keeping them entirely apart from the main collections. The necessity of such a course is best illustrated by reference to the geological collection, which, while abounding in a chaos of purchase and exchanged specimens of European fossils, is markedly deficient in specimens from the rich fossiliferous beds of the cretaceous system of Southern India.

As soon as I had ascertained for myself what line of action it would be necessary for me to carry out so as to make the Museum more in accordance with my views, I applied to Government for a grant of Rs. 12,000 ; but owing to the existing financial pressure, my application could not be acceded to. It, therefore, became necessary for me to make a more moderate estimate and to give up all idea of, at present, arranging the whole of the Museum collections on a more defined system than has hitherto been adopted ; and as I had spent my first official tour in making a collection of fish from Cochin and other places on the West Coast, I decided to pay special attention during the present year to the fish gallery and converting it into a properly arranged gallery illustrative of the marine and fresh water fauna of the Presidency.

This narrowing down of the scope of the Museum was probably dictated by practical and financial exigencies but turned a good part of the work done from 1851 to 1885 into a waste of money, effort and time. Balfour had great visions of the future of the Madras Museum ; he hoped it would develop, perhaps on a small scale, into something like the large museums of European capitals. It is unnecessary to speculate on what would have happened if a man like Balfour were in Thurston's place. The only lesson we ought to learn from the history of Museum policy-making in Madras is that thought should be given to the subject of scope before any major collection work is entered upon. The Madras Museum now contains more extra-provincial material than during Thurston's days, particularly in pre-history and archaeology. Even in geology and natural history extra-provincial and extra-Indian objects have had to be got, on a very limited scale, when they were necessary in the interests of interpreting objects of the province for the benefit of the visitors to the Museum. For the new Archaeological gallery, we had to go a begging for north Indian sculptures, including Gandhara sculptures. No Museum can be rigidly provincial ; Thurston himself recognized this handicap and obstacle to any strict adherence to the policy he adumbrated. My personal opinion is that Thurston was rash in jettisoning, within a year of his coming to the Museum, the extra-Indian material which Balfour, Mitchell, Bidie and Furnell had got together. " Keep a thing for seven years " is a good piece of advice even for museums. It is also unfortunate that records of the manner of the wholesale disposal of the " superfluous " exhibits were not properly maintained.

Dr. Edgar Thurston, C.I.E., F.R.C.S., Superintendent (1885-1908)

Dr. Thurston turned his attention to complete the collection of marine fauna of the Madras coast. His publications, a list of which is given at page 36, reflect his activities during the period preceding the publications. By about 1890, he began to pay special attention to ethnology and strengthen the ethnological section of the Museum. The block of buildings now known as the Front Buildings, the Theatre and the Connemara Public Library, were sanctioned in 1890. During Dr. Thurston's absence on special duty as acting Reporter on Economic Products at Calcutta, Mr. H. Warth of the Geological Survey acted in his place from 1891 to 1893. During this time, he made

a special study of the distribution of corundum; he also discovered phosphatic nodules in the Tiruchirappalli district and invited public attention to the commercial possibilities of the discovery in the manufacture of fertilizers; the large whale shark, which was washed ashore on the Madras beach, was mounted and exhibited in its place; and Hercynite was recorded for the first time in India and specimens distributed to different museums. Warth also tried the novelty of exhibiting donations for six months in special cases before these were distributed to the various sections. Gambles' collection of Madras botanical specimens was also received at the Museum in 1892.

The Relic Caskets of Bhattiprolu and more sculptures from Amaravati were received from Mr. A. Rea of the Department of Archaeology, then a Provincial Officer. In fact, there was then the closest co-operation between the local Superintendent of Archaeology and the Museum and the institution benefited very much from this by its collection of sculptures, pre-historic antiquities from a number of sites being added to. In all branches of the Museum, collection went on at a steady pace.

The idea of publishing the *Madras Museum Bulletin* took shape in 1893. "Advantage was taken of the opportunity" wrote Thurston "to commence a series of bulletins dealing with the results of my wanderings on behalf of the Museum and other matters which may seem worthy of being placed on record."

The Connemara Public Library

The "Technical Institute", Connemara Public Library and Theatre Buildings were completed in 1896. The first of these was found unfit for the purpose for which it was built and so was given over to extend the galleries of the Museum. The Museum Library became the Public Library of the city and the Superintendent of the Museum its Principal Librarian. The new buildings were declared open by the Governor Sir Arthur Havelock on 5th December 1896. The Library was named after Lord Connemara, Governor of Madras, who was a brother of Lord Mayo.

The new Public Library building had an imposing tower 200 feet high, the highest in Madras, but in March 1897 it was found to be in a precarious condition; the Museum had to be closed for some weeks till the tower was demolished.

Till 1898–99, the only technical assistant was a herbarium-keeper; during this year, the Museum herbarium was transferred to the Government Botanist at Coimbatore. The herbarium-keeper, Mr. (later Diwan Bahadur) K. Rangachari was designated Botanic and Economic Assistant.

Most of the zoological work done in Madras till this period was at the Museum, but fisheries investigations independent of the Museum commenced in 1898–99.

From May 1896, the Museum was kept open to the public on Sundays and Friday became the weekly holiday instead of Sunday.

Thurston was on furlough from February 1897 to January 1898, when Dr. A. G. Bourne (later Sir Alfred Bourne, F.R.S., Director of Public Instruction) acted for him.

The Victoria Memorial Hall

In 1902-3, Government expressed their "willingness to grant a site in the Museum grounds for the Victoria Memorial. An exhibition hall of indigenous industrial arts, such as is under contemplation, will be a most fitting companion to the existing art section of the Museum and it will be situated in a public place which is largely resorted to by natives of all classes and also by 'cold weather' visitors to the city". The decision to give a part of the Museum grounds for the Victoria Memorial was modified later on and the Government granted "free of assessment to the Council of the Victoria Technical Institute the entire site of the Marlborough House, Egmore, measuring 4·076 acres for the erection of an institute in commemoration of Her late Majesty Queen Victoria, in lieu of the site granted in G.O. No. 122, Educational, dated 22nd February 1904". The Government gave not only the site but also a liberal contribution to the building fund. Rao Bahadur Arcot Dhanakoti Mudaliar made a donation of Rs. 20,000 to the Victoria Memorial for the purchase of books on art and these books were to be housed in the Connemara Public Library. The Library of the Madras Literary Society was also preserved in the Connemara Public Library till the Society moved it to its own premises.

The Madras Aquarium

The plans for the Madras Aquarium were drawn up in 1905-6 by Dr. Thurston in consultation with a committee consisting of Dr. A. G. Bourne, Dr. J. R. Henderson (of the Christian College), Professor P. F. Fyson and Mr. (later Sir) K. Ramunni Menon and Major W. Molesworth, I.V.S. As this was the first aquarium to be organized in a tropical country, methods of aeration, etc., found useful in Europe had to be modified or adapted and the initial difficulties encountered were great. The Aquarium was opened to the public on October 21, 1909 and it became very popular and justly famous. The total cost of the Aquarium was Rs. 31,307, and during the first six months over a lakh of people visited it. When the Fisheries department came to be well organized, the management of the Aquarium was taken over by it on 1st April 1910. (During 1942, owing to the threat of a Japanese attack on Madras, the city was evacuated, the collections in the

Aquarium were thrown away and the Aquarium ceased to be. Great indeed was its loss to the city and attempts to rebuild the Aquarium have not fructified.) The Aquarium was certainly a feather in Dr. Thurston's cap. The following extract from *Nature*, dated February 3, 1910, is of interest :—

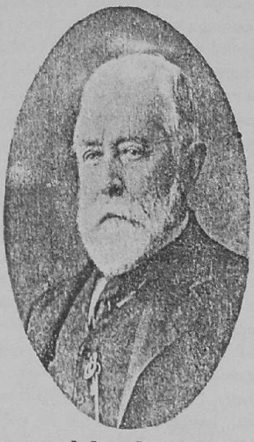
> The Marine Aquarium at Madras which has recently been thrown open to the public, deserves notice as it is the first institution of its kind in India, if, indeed, it is not the first in the tropics. It owes its inception to Lord Ampthill, who, while Governor of Madras some four years ago, drew up in conjunction with Mr. Edgar Thurston, Superintendent of the Madras Museum, the first rough plan of a public aquarium. The building, a low unpretentious *brick edifice, is situated on the seaward side of the famed Madras Marina* less than a hundred yards from the sea. The main entrance leads into a large paved area with a central fresh-water pond and fountain, and on either side five tanks with plate-glass fronts, lit from above, each measuring 7 × 3 × 3½ feet. The entire seaward side of the central area is occupied by a large open tank at present stocked with turtles (*Chelone mydas*). On either side of the entrance passage are two rooms designed for committee meetings, storage of materials, etc., and one of them is occupied at present by the aeration plant.
>
> With the exception of two tanks for fresh-water fish (at present containing species of *Megalops*, *Ophiocephalus*, *Notopterus*, etc.), which are oxygenated by living *Vallisneria*, the remaining eight contain salt water, which circulates from tank to tank, and in addition are supplied with air from two compression cylinders, forced into each tank through a filter candle. At present, the cylinders are filled by hand pumps, but the use of an oil engine is contemplated. Sea water is conveyed to a covered well in the rear of the Aquarium along a pipe filled by hand at the seaward end. From the well it is pumped into filter-beds, and from these passes to large elevated cisterns, whence it is distributed to the tanks. The shore water on the Madras coast is so disturbed by the surf that this filtration is unavoidable, though the removal thereby of small organisms is undoubtedly a drawback. The water which has circulated through the Aquarium tanks can, if desired, be brought back to the filter-beds and used a second time. The Director of the Aquarium is the Superintendent of the Madras Museum, and he is assisted by a local committee. A small admission fee is charged, and already there are signs of the place becoming very popular, more than 1,100 visitors having been admitted on a single day. The magnificent colours of many of the fish, in particular, form a most attractive display. The exhibits include sea-snakes (*Enhydrina* and species of *Distira*) and among the fish species of the following :—*Ginglymostoma*, *Stegostoma*, *Chiloscyllium*, *Muraena*, *Arius*, *Therapon*, *Serranus*, *Lutjanus*, *Myripristis*, *Trachynotus*, *Pterois*, *Caranx*, *Antennarius*, *Heniochus*, *Julis*, *Teuthis*, *Balistes*, *Tetrodon*. The invertebrates comprise cuttle-fish, holothurians, hermit-crabs (*Clibanarius*), swimming crabs (*Scylla* and *Neptunus*), lobsters (*Panulirus*), prawns (*Penaeus*), etc. All the specimens have been taken on the Madras coast within a few miles of the Aquarium.

Thurston's Contribution to Anthropology

Dr. Thurston commenced his anthropological investigations sometime about 1894. Though his earlier papers on the Todas were superseded when W. H. R. Rivers published his "Todas", at the time of their publication, they attracted wide attention. In 1901, under the orders of the Government of India, Thurston was appointed Superintendent of the Ethnological Survey for Madras. In the survey work, Thurston was very ably assisted by Sri K. Rangachari, who also took several hundreds of photographs of ethnological interest which are still carefully preserved in the Museum. He took several

thousands of anthropometric measurements, thus becoming a pioneer investigator in human biology in Southern India. Fawcett, K. Rangachari, L. K. Anantakrishna Ayyar and a number of other South Indians were initiated into Anthropology by Thurston. In his own words (1895), " the Madras Museum has quite recently become a centre for the study of Anthropology (a bureau of Anthropology)." As early as 1895, thanks to the initiative of Thurston, Anthropology was adopted as a post-graduate subject in the Madras University. In the space at my disposal here, it is not possible to go in detail into the research in Anthropology done by Thurston, but the bibliography below will give a fair idea of its range.

In 1904-5, Government purchased for the Museum " the pre-historic and proto-historic collection, brought together, in the course of his long service in India, by Mr. R. Bruce Foote. The main importance of this collection, so far as this Museum is concerned, is that it forms a very valuable supplement to the existing collection, which was previously composed mainly of articles in pottery and iron, and very deficient in articles in stone. Working, as he did, for many years in Southern India as an officer of the Geological Survey, Mr. Foote brought together a magnificent collection of palaeolithic and neolithic celts, hammers, mealing-stones, scrapers, cores, bangles, beads, etc., from Salem, Bellary, Anantapur, Kurnool and other districts, to which he later added a representative collection from the Nizam's Dominions, Baroda, Kathiawar, Chota Nagpur and other localities in the north. A check-list was being printed at the end of the year, and the collection will be hereafter exhibited either in the new annexé, to which I have referred, or in a special annexé, which will have to be built. The new annexé was constructed to contain the large prehistoric or proto-historic collection excavated by Mr. A. Rea, Superintendent of the Archaeological Survey, the arrangement of which is in active progress."


R. Bruce Foote

" During his (Thurston's) period of administration ", wrote Henderson in 1910, " the Museum has undergone great development in every direction, and in particular, the addition of the Connemara Public Library and the New Building in 1896, has greatly increased both the size and the scope of the institution. To his enthusiasm and discrimination, the extent and the

arrangement of the collections are due; in his writings, more particularly, those relating to anthropology and numismatics, he has left an enduring record of his work."

'The following are Mr. Edgar Thurston's publications :—

1887 Preliminary Report on the Marine Fauna of Rameswaram and the neighbouring Islands.

1888 Coins. Catalogue No. 1. Mysore.

Coins. Catalogue No. 2. Roman, Indo-Portuguese and Ceylon. (Revised with additions 1894.)

Catalogue of the Batrachia Salientia and Apoda of Southern India.

1890 Catalogue of Minerals, Ores and Rocks; with a note on Meteorites, of which the fall in Southern India has been recorded.

History of the Coinage of the Territories of the East India Company in the Indian Peninsula; and Catalogue of the coins in the Madras Museum.

Pearl and Chank Fisheries and Marine Fauna of the Gulf of Manaar. Notes.

Guide to the Natural History and Mineral Galleries.

1893 Coins. Catalogue No. 3. Sultans of Delhi.

Notes on the History of the East India Company Coinage 1753-1835 (Reprint).

1894 Coins. Catalogue No. 2. Roman, Indo-Portuguese and Ceylon. 2nd Edn. Revised with additions.

Guide to the Natural History and Mineral Galleries. 2nd Edn. Revised with additions.

Notes on Tours along the Malabar Coast (*Bulletin*, Vol. I, No. 2.)

1895 Rameswaram Island and Fauna of the Gulf of Manaar 2nd Edn Revised with additions. (*Bulletin*, Vol. I, No. 3.)

1896 Anthropology of the Todas and Kotas of the Nilgiri Hills; and of the Brahmans, Kammalans, Pallis and Paraiyas of Madras City. (*Bulletin*, Vol. I, No. 4.)

1897 Anthropology: Badagas and Irulas of the Nilgiris; Paniyans of Malabar; A Chinese-Tamil Cross; A Cheruman Skull; Kuruba or Kurumba; Summary of Results. (*Bulletin*, Vol. II, No. 1.)

Monograph on the Cotton Fabric Industry of the Madras Presidency with 16 plates.

1898 Anthropology: Eurasians of Madras and Malabar; Notes on Tattooing; Malagasy-Nias-Dravidians; Toda Petition. (*Bulletin*, Vol. II, No. 2.)

Monograph on the Woollen Fabric Industry of the Madras Presidency.

1899 Anthropology: Kadirs of the Anaimalais; Malaialis of the Shevaroys; Syllabus of Demonstrations on Anthropology; The Dravidian Head; The Dravidian Problem. (*Bulletin*, Vol. II, No. 3.)

Monograph on the Silk Fabric Industry of the Madras Presidency.

1900 Sea Fisheries of Malabar and South Kanara. (*Bulletin*, Vol. III, No. 2.)

1901 Anthropology: Todas of the Nilgiris; Eurasian School boys; Meriah Sacrifice post; Walking through Fire; Malaialis of the Shevaroys; Scissors People; Sorcery in Coimbatore; Nayadis of Malabar. (*Bulletin*, Vol. IV, No. 1.)

Anthropology: The Dravidian Head; Yanadis of Nellore; Miscellanea. (*Bulletin*, Vol. IV, No. 2.)

Monograph on the Ivory-carving Industry of Southern India.

1903 Anthropology: Some marriage customs in Southern India; Deformity and Mutilation; Uralis, Sholigas and Irulas; Fire-walking in Ganjam; Corporal Punishment in Vernacular Schools. (*Bulletin*, Vol. IV, No. 3.)

Anthropology: Vision of the Uralis and Sholigas; More Marriage customs in Southern India; Hook-swinging; Paliyans. (*Bulletin*, Vol. V, No. 1.)

Monograph on Wood-carving in Southern India.

1906 Ethnographic Notes in Southern India.

1909 Castes and Tribes of Southern India. Seven Volumes.

1912 Omens and Superstitions of Southern India.

1913 Illustrations of metal work in brass and copper mostly South Indian (with other authors).

The Madras Presidency with Mysore, Coorg and the Associated States.

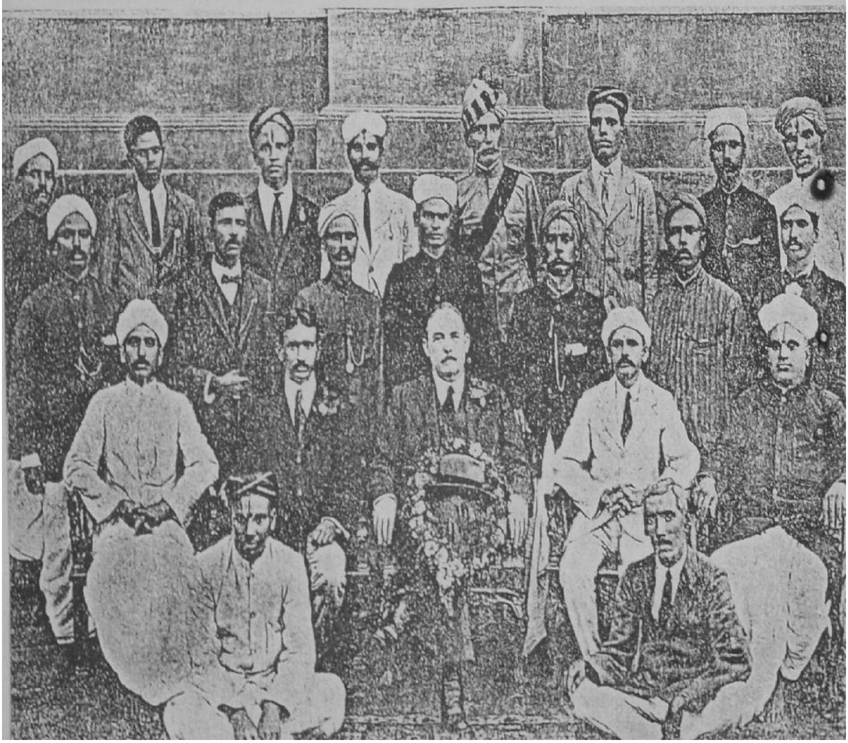
Dr. J. R. HENDERSON, M.B., C.M., C.I.E.

Superintendent (1908–1919)

Dr. John Robert Henderson, who succeeded Thurston in 1908, was already connected with the Museum as its Honorary Assistant Superintendent. Before he joined the Museum, he was Professor of Biology in the Madras Christian College from about 1892, and had done original work of a high order on crustacea. Some of the most outstanding South Indian Zoologists, such as Dr. George Mathai and Dr. B. Sundara Raj were among his students. Dr. Henderson's experience as an educationist stood the Museum in good stead. By this time, the collections of the Museum had grown enormously during the past quarter of a century, and required to be properly arranged, catalogued, labelled, preserved and also clearly explained. Henderson, introduced the small habitat groups in the zoological section of the Museum as such groups were of great educational use. He had the Botanical Assistant to catalogue the economic products; the pre-historic material was catalogued by Foote and Rea; Henderson himself catalogued the coins of Hyder

Staff of the Museum and Library in 1919

Seated—Lt. to Rt. Sri H. Chennappayya (Curator for Zoology), Sri M. D. Raghavan (P.A.), Dr. J. R. Henderson (Superintendent & Principal Librarian), Sri T. Narasinga Rao (Curator for Botany) & Sri R. Srinivasa Raghava Iyengar (Curator for Archaeology). On the ground—Sri D. Rajagopala Iyengar (Head Clerk), Sri Veda Manickam (Store Keeper)



Dr. J. R. Henderson, M.B., C.M., C.I.E., Superintendent (1908–1919)

Ali and Tippu Sultan in the Numismatic Section and made arrangements for the cataloguing of the other classes of coins, for which and other allied archaeological work, he got Government sanction for the post of an Archaeological Assistant. Popular lectures at the Museum were continued and being a very good speaker and teacher, he was able to make the talks very interesting and well attended. Parties of school children were encouraged to visit the Museum when gallery talks were regularly arranged for them. During Henderson's time the Museum began to be better used by school boys as well as teachers.

Extensions to the Front Buildings to house arms and weapons and the "pre-historic" collections and to the old buildings for sculptures and the construction of the present office buildings were taken on hand during Henderson's term as Superintendent. The addition of a large hall next to the old sculpture room made it possible for the former to be used entirely for Buddhist sculptures and the Hindu sculptures, hitherto stored in cellars, to be displayed in the new hall. A great number of duplicates of pottery from Adichanallur and Perumbair were distributed to all the major museums of India and Burma in 1914-15 and to the British Museum, the Royal Scottish Museum, Edinburgh, University Museum of Archaeology and Ethnology, Cambridge, and the Pitt Rivers Museum, Oxford (1915-16), after meeting the needs of the new gallery for pre-historics in the Front Building.

Among the distinguished visitors to the Museum in the first decade of the present century were Lord Kitchener, Commander-in-Chief, Lord and Lady Pentland, the Hon'ble E. S. Montagu, and Lady Hardinge.

The general "tone" of the Museum rose to a high level under Dr. Henderson's care. On his retirement, the following was recorded by Government: "The Governor in Council takes this opportunity to place on record his high appreciation of the services of Dr. John Robert Henderson, C.I.E., who, for the past ten years, has filled the post of Superintendent of the Museum with marked distinction and success."

Dr. FREDERIC HENRY GRAVELY, D.Sc., F.R.A.S.B., F.N.I.

Superintendent (1920-1940)

BIOGRAPHICAL SKETCH

(For the following sketch of Dr. Gravely's life, I am indebted to Mrs. Gravely who took a very keen interest in the Museum.)

Into a peaceful, prosperous Quaker home in Northamptonshire, to parents possessing in a rare degree the personal qualities that make life harmonious and beautiful, serenity and a high sense of duty to God and man, Frederic Henry was born one December day in 1885. The eldest son of his parents and first grandson of devoted grand parents, the little lad received a warm welcome into the world and every care and blessing.

His father, himself a businessman with his naturalist instincts thwarted by circumstances, encouraged the boy's inquisitiveness and early interest for natural phenomena. His mother, a farmer's daughter of a family which had produced such an eminent scientist as Sir Jonathan Hutchinson, contributed much to make this son of hers "a lover of the meadows and the woods and mountains and of all that we behold from this green earth; of all the mighty world of eye and ear." From her he inherited his love for gardening which has been a source of joy throughout his life.

Dr. Frederic Henry Gravely, D.Sc., F.R.A.S.B., F.N.I., Superintendent (1920–1940)

From both his parents, from his whole early environment, the eager, sensitive boy received a strong impression of spiritual values, of truth, goodness and beauty, and the unity of all life.

The warm security of this beautiful home had in time to be changed for a wider experience of life. At the age of nine, F.G. had to face the big cold world in the shape of his first boarding school, a small school at Sheffield. It is a joke in the family that he had at this tender age already developed his literary style characterised by great brevity and conciseness. His first letter from school— still preserved by his mother— reads: "Arrived here. Saw a circus. Love. Fred." It was, however, not this school, but "Ackworth" to which he proceeded a couple of years later and at which he spent the longest period of his school life, that especially promoted the development

of his mind and character and encouraged his innate qualities of skill. This was a country school roofed by the blue sky and surrounded by the broad fields of Yorkshire, and he found here the freedom of movement and the intimate contact with nature for which he always longed. The school activities under the guidance of the great Headmaster, Frederick Andrews, not only supplied the cultural requirements for a rich and happy life, but through leisure as well as curriculum, provided the equipment, opportunity and advice necessary for scientific preparation. F.G.'s nature study diaries from that period show that even a school boy may be capable of undertaking honest, elementary research. The last years of his school life were spent at "Bootham", York, then as now noted for its high academic standards, from which he matriculated in 1903.

At "Ackworth" as well as "Bootham" (both schools belonging to the Society of Friends) the emphasis was laid on teaching the children how to think rather than what to think, and every effort was directed towards the development of free, courageous personalities, capable of taking their parts in the world with vigour and vision, ever conscious of the infinite duty of each to all.

Whether it was living in the proximity of splendid York Minster or his visits to ancient English churches of different types that roused F.G.'s early archaeological interest may be difficult to decide. Sufficient to say that this eager boy with his sharp open senses and keen mind was from his school days intensely fascinated by the messages in stone, in clay, in bronze, in wood, or colour through which the past reveals itself to our time and anxious to learn how to interpret them rightly. It gave him a deep satisfaction to be able to date an English Church by a look at its architectural structure and at the sight of old implements to visualize early man and his struggle for existence and development.

It has often been said of F.G. that he was a peculiarly fortunate man inasmuch as his work and his hobby coincided. This good fortune can be traced back to his school days during which leisure activities and class room work, happily blended, clearly revealed his true aptitudes and lasting interests. From "Bootham", F.G. went to Manchester University to pursue the study of Zoology. He graduated in 1906, continued his research work (on an exhibition) during 1907, became Demonstrator at the University, the same year, a position he held till in 1909, when he was appointed Assistant Superintendent of the Indian Museum, Calcutta.

In 1906, F.G. published, jointly with Prof. S. J. Hickson, Hydroids of the "Discovery" Antarctic Expedition, an investigation in which he had been engaged since his second year at College. He obtained his M.Sc. Degree in 1908 for a thesis on Polychaet Larvae, published in 1909.

While at Manchester University, F.G. received valuable social training as a District Secretary to the City League of Help.

Those who believe in the favouritism of Fortune may justly claim that she smiled on F.G. when she brought him to India. It seemed to happen by chance, a more senior man had been selected for the job but failed to procure the necessary medical certificate and the post was given to Gravely who had not even applied for it.

From 1910 to 1940 India has been F.G.'s happy home. With a wholeheartedness inherited from his Quaker ancestors, without a backward glance or vain dreams of an alluring future, he has filled his days in India with joyful work.

India, with its infinitely rich heritage to which diverse races and epochs have abundantly contributed, afforded him unlimited opportunity and unlimited delight. He took to India as a duck to the water, found ever-increasing scope for work of so varied a nature as the study of Pedipalpi, Littoral Fauna, Hindu Metal Images and Indian Temple Architecture—and found ever-increasing fellowship with its friendly, charming inhabitants whether brother scientist or brother scout. He met Indians

with simple friendliness and naturalness to which they invariably responded with traditional graciousness. Differences of race, creed or political outlook proved no obstacle but rather an added interest to these spontaneous human contacts. In 1914, F.G. received his D.Sc. degree for his work on "Oriental Passalidae." In 1915, as his war service, he moved from the "Museum House" to the Old Mission Church Boys' Home, near Bow Bazaar, Calcutta, where he lived till 1920 giving all his spare time to help the boys in their physical need and mental perplexities and encourage their hobbies. Applying the lessons learnt at Manchester, he organized a Committee of voluntary helpers for the District Charitable Society and compiled for its use a hand-book of the Anglo-Indian charities in Calcutta. While living at the Boys' Home, he was introduced to the Boy Scout Movement to which he gave an undivided heart.

In 1920 F.G. was appointed Superintendent of the Government Museum, Madras. With this change, new vistas opened up before him and new problems challenged him as he moved in his new Museum surrounded by delicate Amaravati bas-reliefs and magnificent Hindu bronzes. His bachelor home and its spacious grounds were soon turned into a regular scout camp. The doors to the "Museum House" opened readily to any boy or youth in need of encouragement. The Bharata Troop (Egmore 5th) of which F.G. was Scout Master shared his board, books, his every earthly possession.

The first Indian branch of Toc H. was founded in the drawing room of the "Museum House" and F.G. gave wholehearted support to the activities of this organization.

In 1925, F.G. married Laura Balling, and to them were born in 1928, Ann Margaret and in 1931 John Frederic.

Always aware of the responsibility the more fortunate members of Society owe to their less fortunate brothers, F.G. began in 1925, under the auspices of Toc H., his regular visits to the Madras Penitentiary, where he found many friends and gained much understanding of human problems. His many collecting tours to various parts of India as well as to Burma and Ceylon were occasions to which he always looked forward and from which he always returned refreshed and stimulated to new efforts.

F. H. Gravely is a Fellow of the Royal Asiatic Society of Bengal and a Fellow of the National Institute of Sciences of India He has served as Honorary Secretary to the Asiatic Society of Bengal; President of the Madras Science Club; President of the Zoological Section, Indian Science Congress; Corresponding Member of the Committee, Bombay Natural History Society; Member of the Editorial Board, Current Science, Member of the Board of Studies in Zoology, Madras University; Chairman of the Board of Studies in Anthropology, Madras University; Chairman of the Museums Conference, Delhi; District Secretary, District Charitable Society, Calcutta; Honorary Secretary, Friends-in-Need Society, Madras; Honorary Secretary to the Madras Agri-Horticultural Society; Secretary to the Victoria Technical Institute, Madras; Chairman of the Executive Committee, Toc H., Madras; Editor of the "South India Boy Scout", etc.

F.G. was always very shy of the limelight. His work was done quietly to the motto: "everything that is worth doing is worth doing well." The centre of his life was the hearth, not the club.

He retired from the Madras Museum in December 1940

The portrayal of Dr. Gravely given above would give the reader of this historical account an idea of the man to whom the Government of Madras entrusted the care and development of their Museum in 1920. He was different from his predecessor Dr. Henderson in several important respects.

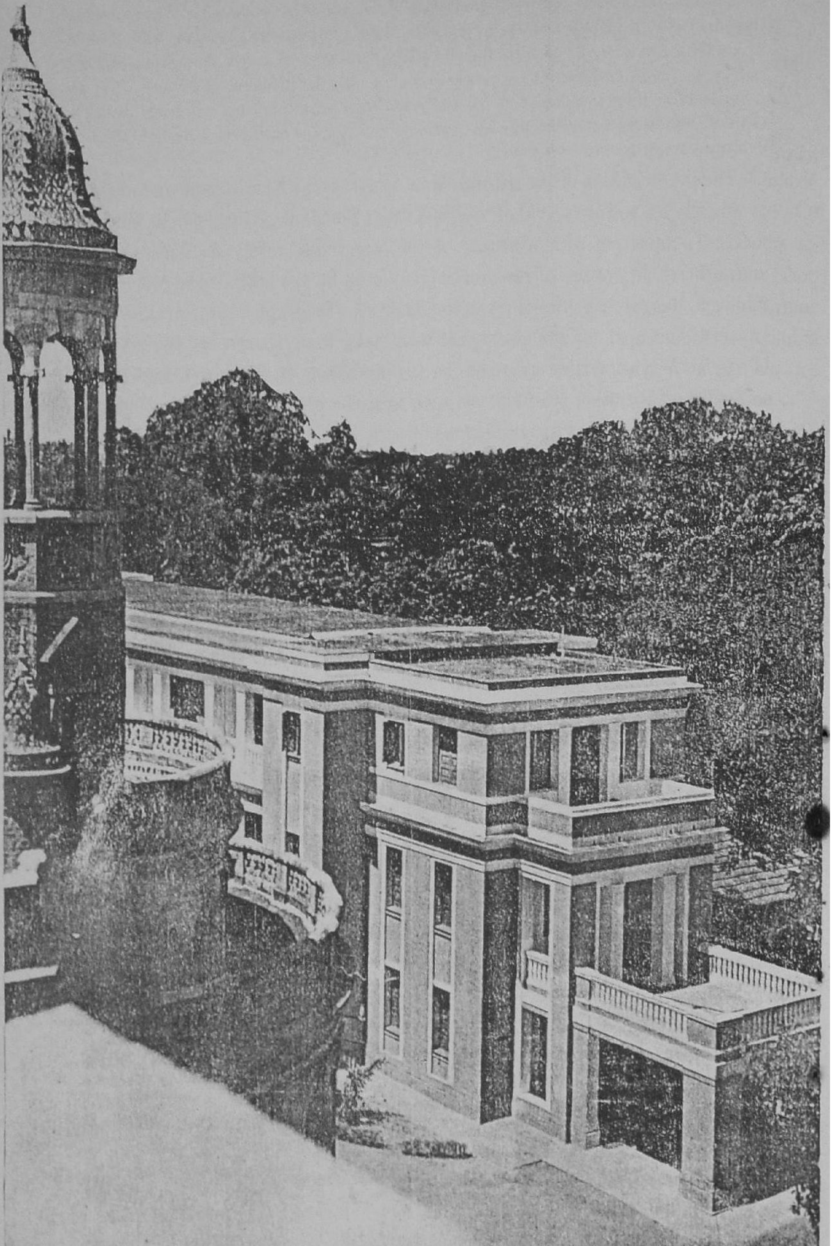
Dr. Henderson was solemn, imperious, phlegmatic and, I am told, race-conscious while Dr. Gravely was genial, kindly, accessible to everyone and physically very active. Both agreed, however, in being thorough and systematic in their scientific work and intolerant of superficiality and shoddiness in anything prepared in the Museum for the public. When Dr. Gravely took charge of the Museum, the administrative set-up in the Province had changed and the Museum was one of the several transferred subjects under the Minister for Education. As most transferred subjects under Dyarchy encountered financial difficulties, the development of the Museum was hampered by inadequate budget and constant retrenchments. While I am not aware of any proposals of Dr. Henderson having been rejected by Government, Dr. Gravely had to press hard for most of his schemes for the improvement of the Museum. He was against all cheap popularity and advertisement. So highly was he conscious of the fact that the Museum budget was derived from the poor tax-payers' money that he never allowed a rupee of it to be spent when he was not quite sure it was well spent. When once he counted the sticks in match boxes to ensure that match boxes were economically used, his office staff could not understand him ! Those who had the proud privilege of working with him or under him were powerfully influenced by his high ethical fervour and honoured him as one of the best Englishmen who served India.

Dr. Gravely took charge of his office on 31st January 1920 from Mr. H. Dodwell who acted as Superintendent, Government Museum and Principal Librarian, Connemara Public Library, in the interim period after Dr. Henderson's retirement with effect from 25th April 1919. In the Indian Museum at Calcutta where he was Assistant Superintendent for ten years, Dr. Gravely had gained experience of museum work, of course, limited to zoology, but at Madras he had to deal with a very wide range of subjects, some of which were new to him. He had, in addition, to deal with two libraries, the Connemara Public Library as Principal Librarian, and the new University Library which was housed in the Connemara Public Library Buildings, as the Chairman of its Committee. In his early years, at Madras Dr. Gravely concentrated on zoological work. In 1924 he records :

> In the Zoological Section, I have been investigating the littoral fauna of Krusadai Island in the Gulf of Manaar. As a result of resolutions passed at the 1924 meeting of the Indian [illegible] Congress, the University of Madras are arranging with the Fisheries Department to [illegible] island belongs to establish upon it a Marine Biological Station [illegible] marine organisms under natural conditions much more favourab[illegible] A need has therefore arisen for a general introduction to [illegible] will enable a student to put himself in touch with it, [illegible] possible. This is work which in some respects [illegible] either the University or Colleges with their pro[illegible]

the Fisheries Department with its large amount of administrative work. The Superintendent therefore visited the island with Dr. Sundara Raj, Prof. Parthasarathi Ayyangar and others in April 1924 and aided by Dr. Sundara Raj and others is still working on the Zoological collections then made. Prof. Parthasarathi Ayyangar is dealing with the Botanical collections. Though originally taken up in the interests of the University, this work is proving extremely valuable to the Zoological Section of the Museum, providing as it will, the nucleus of a named collection in many different groups.

The investigation of the littoral fauna of Krusadai Island, thus undertaken, eventually led to the revival of the Bulletin of the Madras Government Museum for the publication of the results of the researches, firstly on marine fauna and later of the results of researches conducted by the staff of the Museum in Zoology, Botany, Anthropology, Numismatics, Epigraphy and Archaeology. In 1926, the staff for archaeological work was strengthened by the addition of one more post, enabling one of the two assistants to do concentrated work on coins and the other to study and catalogue the bronzes and other sculptures which so long remained uncatalogued. In the same year, a part-time Ethnological Assistant's post was sanctioned so that it became possible to deal properly with the ethnological and pre-historic collections. "The appointment of Dewan Bahadur K. Rangachariar Avargal" wrote Dr. Gravely "as part-time Ethnological Assistant has made it possible, for the first time since the retirement of Dr. Thurston in 1909, to prepare plans for ethnological investigations. The way in which contacts with civilization are modifying the habits of even the most secluded races makes it of the highest importance that such investigations should be made and recorded before the ancient traditions are irrevocably lost." Two years later, Government sanctioned the appointment of a full-time Assistant for Ethnology and another Assistant for the most essential work of Chemical Conservation. Dr. S. Paramasivan has described in another article in this volume the early history of the Chemical Laboratory of the Madras Museum. In this manner, by 1929, Dr. Gravely had the minimum scientific staff to make the Museum a centre of research and not merely the store-house it used to be till the time of Thurston and a one-man show that it was during both his and Dr. J. R. Henderson's time. No museum can be worth the name if the collections were not scientifically preserved, carefully studied and interpreted. This second function of a museum makes it essential that the staff of the museum should do research and publish the results of research as promptly as possible. Research not ...y aids in the proper interpretation of the collections in the museum, but ...s the way for future collections. More original papers were published ... the staff of the Madras Museum during the period 1927 to 1940, in the Madras Museum Bulletin series and in the various scientific periodicals of ...d foreign countries than was done before or after. This intense ...ctivity raised the prestige of the Madras Museum and gave it a very



New Extension—Opened in 1939

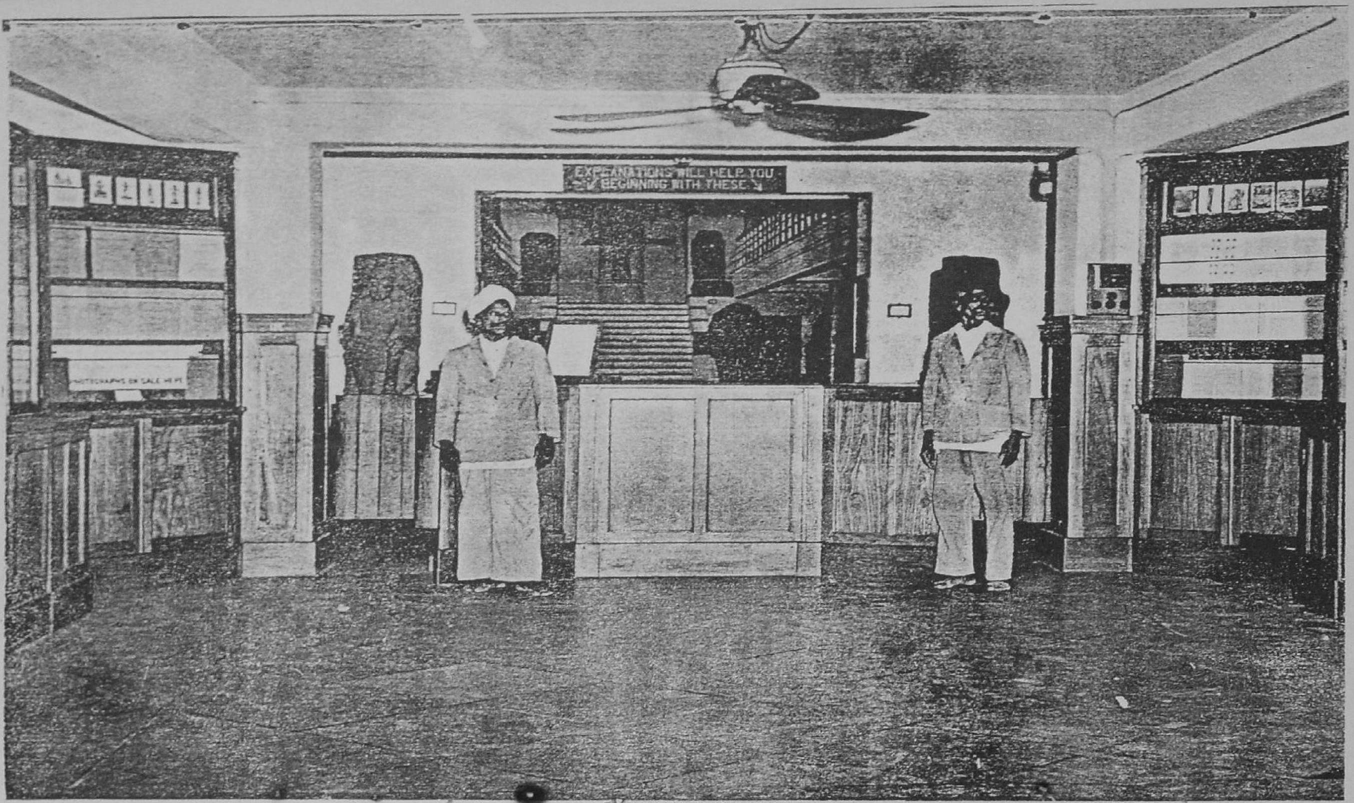
high status. In their report on Indian Museums, Markham and Hargreaves wrote :

> Research is well to the fore at the Madras Government Museum, and its lengthy list of publications deals with Archaeology, Ethnology and Zoology. It is also one of the few institutions where researches are being carried out in connexion with the treatment and preservation of museum exhibits (page 77).

Along with research, collection and cataloguing also proceeded at a vigorous pace. The reserve collection in Zoology, particularly of invertebrates, was enlarged and improved. Dr. Gravely's work on Arachnida and Mollusca helped in completing the gallery and reserve collection in those two large zoological groups. The botanical work done by Dr. Gravely and the late Sri. P. V. Mayuranathan helped to strengthen the Museum herbarium and our botanical collections. The collection of musical instruments, metal images, Venetian coins, Buddhist sculptures from Goli, the Adichanallur skulls, and the Manley Collection of Stone Age Tools, were monographed and arrangements were made for catalogues of the Amaravati sculptures, Punch-marked coins, Roman coins and the Nagapattinam bronzes. Some of these catalogues have yet to be completed. These catalogues are not mere lists, but authoritative monographs on the concerned subjects, hence the delay in their publication. The Connemara Public Library of which Dr. Gravely was Principal Librarian till 1939 and later Associate Librarian, benefited by having the very large number of periodicals from India and abroad obtained by the exchange of the publications of the Madras Government Museum.

Dr. Gravely's greatest achievement, which the public of Madras and other visitors to the Museum will long enjoy is the new archaeological extension. In his Administration Report for 1939-40 he writes as follows :—

> Since the opening of the archaeological gallery on the ground floor of the new extension to the Museum by His Excellency the Governor on December 4, 1939, visitors have for the first time had put before them in a way that they can readily understand, a brief outline of the history as revealed by art, of the early empires of northern India, and of the principal empires and kingdoms of the south right up to modern times. Till this new gallery became available the exhibits in the archaeological section had all been arranged on iconographic lines. Now stone sculpture illustrates history, while bronzes continue to illustrate iconography. The recent addition of a large number of splendid examples of Hindu stone sculpture has enabled us to eliminate .. inferior ones, at last making the collection worthy of comparison with the collection of bronzes, while its beauty shows to much better advantage in its new setting. Sculpture of the early empires of northern India, without reference to which the sculpture of the south cannot be properly understood, was previously represented by Graeco-Buddhist sculptures only, the school of least importance to the study of indigenous Indian sculpture. With the aid of the Director-General of Archaeology in India and of the Curators of Museums in the north, specimens and photographs have been acquired to illustrate the development of early indigenous sculpture from Mauryan to Gupta times, and we are now able to exhibit examples of Sunga, Graeco-Buddhist, Kushan and Gupta sculpture, Mauryan and northern Andhra being represented by photographs and southern Andhra by our fine collection from the Amaravati and other stupas of the Guntur and Kistna districts.



Entrance Hall of the Museum

That this mode of illustrating Indian history by actual examples of work produced in different times and areas meets a real need of the general public is evidenced by the care with which we see it being studied and the explanatory labels read not of course by all or even by more than a comparatively small minority of the large total number of daily visitors, but nevertheless by an appreciable number of them-- while during the four months that the new gallery was open in the year under review 115 copies of the guide to the archaeological collections, first published on the opening day, were sold.

This guide aims at providing in a form that can be taken away and kept for reference, the gist of the information given in the galleries It contains a brief account of the history of South Indian temple architecture, put in relation to the development of early Indian sculpture in the north and of Eastern Indian mediaeval sculpture, these subjects being illustrated by a map, diagrams and a few photographs. It also includes notes on the history of South Indian scripts, a summary of the history of Indian coinage, and a short outline of Hindu, Buddhist and Jain iconography, all of course with special reference to South India. And we venture to hope that the public will find in it a background for the proper appreciation of Indian culture simple enough for all to understand, yet to which more detailed knowledge may easily be related. Few visitors to Indian museums buy such guides unless they are extremely cheap. Illustrations had therefore to be severely restricted and Government sanctioned a supplementary volume of 46 plates so that representatives of all the main types of sculpture mentioned could be included, the price being fixed at 8 annas each for the guide and Rs. 1 8 0 for the volume of illustrations so that they might be within the means of as many as possible, leaving no margin even for trade discount That the volume of illustrations also meets a definite need is shown by the fact that 65 copies were sold before the beginning of April, more than half as many as were sold of the guide in spite of its cost necessarily being three times as high. These books have already been warmly commended in a notice of them given in *Nature*, the leading British scientific weekly paper, in which it is said " No stronger plea than that afforded by these guides could be put forward for the adoption of a vigorous forward policy on the educational side throughout the Museums of India. As the report of the Museums Commission showed these institutions are already places of popular resort ; but it depends upon the arrangement and administration of the museum itself whether they are mere repositories of 'curios', or really serve to bring home to the people the continuity in spiritual meaning underlying objects and buildings and structures familiar to them in their daily life ".

During the preparation of the guide several interesting facts became apparent that seem to have escaped notice before. Thus it was seen that among inscribed casing slabs from the Amaravati stupa, dated by the script as being from about the end of the first century A D. and thus contemporaneous with the earliest representations of Buddha in bodily form in the indigenous sculpture of the north, though most bear symbolic representations of Buddha at the time of his enlightenment, first sermon or nirvana, two show him in bodily form, proving that the tendency towards showing him thus extended from Mathura (the modern Muttra) to Amaravati instead of being confined to the Mathura region as had commonly been supposed " . Andhra sculpture of Amaravati, however, is more deeply imbued with religious feeling than is the contemporaneous Kushan sculpture of Mathura, a fact that is probably connected with the persistence in Andhra sculpture of preference for the symbolic to the bodily representation till the disappearance of the dynasty a century and a half later, whereas in Kushan sculpture the bodily representation rapidly replaced the symbolic representation entirely It also became clear that the southern or Dravidian form of temple almost certainly prevailed over the whole of South India (with the probable exception of Kerala) up to and including the Chalukyan kingdoms, while the northern or Indo-Aryan form used by the Imperial Guptas must have spread southwards from their empire with, but scarcely as far as, the spread of the influence of their art, reaching the Western Chalukyan kingdom at an early date and eventually uniting there with the southern form of temple to produce the form used by the Hoysalas of Mysore, but apparently

not penetrating into the Eastern Chalukyan kingdom, nor to the Tamil country beyond. The early mediaeval sculpture of the Tamil country seems, moreover, to have sprung from an earlier local art that had been strongly influenced by the Andhra art of Amaravati but not by the later and more developed, but more distant, art of the Guptas.

The architecture of South Indian temples was a neglected and, to most laymen, a very remote subject. But Dr. Gravely's interest in the subject of architecture led to a very close study of the subject. How he did this has been described in his "Reminiscences". In two thin but most interesting numbers of the Madras Museum Bulletin (General series), "Three Main Styles of Temple Architecture" and "Outline of Temple Architecture", Dr. Gravely and Sri. T. N. Ramachandran have given a very clear, logical and simple idea of the development and cross-cultural influences on temple architecture in Southern India. Dr. Gravely's "Outline of Temple Architecture" has proved to be the best seller among the publications of the Madras Museum. The two most popular subjects on which Dr. Gravely spoke to Madras audiences were "How to look at a temple" and "Spiders".

Dr. Gravely made an effort to improve the registration of the collections in the various sections, which left much to be desired. The treasure-trove registers were first improved incorporating the suggestions made by Mr. F. J. Richards, I.C.S., a great friend of the Museum. Though the Museum had old accession registers, they were very imperfect and few of the specimens had numbers on them to relate them to the entries in the register. In 1931, stock registers of exhibits in the galleries were made and also separate accession registers for each of the main sections of the Museum. As the Museum had only a part-time numismatist at this time, the preparation of similar stock registers for coins could not be undertaken (but this had to be begun in 1941). As regards the small collection of paintings in the Museum, most of which were got during Dr. Thurston's time and to which he also made some additions, Dr. Gravely thought that they "would form a useful nucleus to any South Indian historical art collection" and added "all that we can do is to keep them as safely as our knowledge and funds permit till such time as Madras can afford an art gallery in charge of someone technically and financially equipped for the preservation and intelligible arrangement of pictures". The only thing that was proposed to be done about the pictures was to have a good register containing the full history of each of the paintings, so that the register may be of use to those who wanted to reconstruct the story of modern painting in Southern India.

Dr. Gravely not only continued the demonstrations to school teachers begun during Dr. Henderson's days, but delivered talks on class-room methods in Natural History which ought to make teachers museum-minded. In order to have a record of the progress of these educational efforts, a separate register of conducted tours of school children began to be maintained.

As it was premature to publish a full general guide to the Museum, when several of the public galleries had not approached a fair stage near completeness, Dr. Gravely hit upon the idea of publishing a brief six-page folder—*Handy Guides* he called them—in English, Tamil, Telugu and Malayalam, priced at 6 pies a copy. The Indian language editions of the *Handy Guide* were prepared to meet the patriotic demand for publications in the local languages, but while the English edition sold well, the sale of the others was poor, showing thereby that those visitors who wanted the *Guides* mostly preferred the English one. When the New Extension, opened in 1939, made it possible for the chronological display of sculptures, mostly South Indian along with a few North Indian specimens, Dr. Gravely published the first regular *Guide* to be issued by the Museum, the "Guide to the Archaeological Galleries" with a companion volume of illustrations. Another new venture was the preparation for sale at the Museum book counter of an excellent set of picture post-cards of bronzes in the Museum. With pardonable pride we can claim that these picture postcards were the best sold by any museum in India. From about 1932, selected exhibits in the archaeological and anthropological galleries began to be labelled in Tamil and Telugu.

The vivarium, the remnant of the Zoological gardens of the Museum was abolished in 1921, as the room was required for other purposes and the Madras Zoo under the management of the City Corporation was sufficiently developed to make a vivarium in the Museum somewhat unnecessary. Another link with the past was partially broken when in 1939, when the Superintendent of the Museum ceased to be the Principal Librarian of the Connemara Public Library but became instead the Associate Librarian just in order to continue the useful tradition of co-operation between the Museum and the Library of the Province.

Dr. Gravely maintained a close co-operative association with the Indian Museum, Calcutta, particularly the Zoological and Geological Surveys, with the Archaeological Survey of India and with the Madras University to the advantage of all the concerned institutions. Specialists in various subjects were invariably most generous in their help to the Museum. Dr. Balfour in the early days of the Museum obtained similar co-operation. Things had changed by 1920 and Dr. Gravely got such co-operative support on a wide scale because of his personal qualities. When it was his privilege to give, he gave generously. To Dr. Ananda Coomaraswami's Museum in Boston, he gave in 1921 as the gift of the Madras Government 18 pieces of Amaravati sculptures, 37 wood-carvings and 11 sculptures; 467 pieces in all, including a few bronzes to the Prince of Wales Museum, and 22 pieces to the Lucknow Museum. The Madras Museum has given more to other museums in India and Europe than it has received.

When Dr. Gravely took leave of his staff on December 5, 1940, the scene was indeed a moving one. How beloved he was of all those assembled in the Goli

Sculpture (old Library) Hall could objectively be seen on that unforgettable occasion. A portrait of Dr. Gravely was unveiled in the Museum Theatre on March 16, 1943, by Sir George Boag, I.C.S., Adviser to the Government of Madras, and also President of the Archaeological Society of South India of which Dr. Gravely was the Secretary.

Dr. Gravely, even after his retirement, continues to take keen interest in the Museum and in his numerous South Indian friends. His home in Reading is open for all of them on visits to England. His new contribution on "The Temple Gopurams of Tiruvannamalai" the typescript of which reached us recently is awaiting publication in the Bulletin series of the Museum.

THE MUSEUM IN RECENT YEARS

Dr. A. Aiyappan who succeeded Dr. Gravely was for about eleven years Curator of the Anthropological Section before he was promoted as Superintendent. He was, thus, not only the first Indian to be in charge of the Museum but also the first from the scientific staff of the Museum to have the privilege of being the head of the institution. The amendments to the rules to make such transfer possible were made on Dr. Gravely's initiative. Prior experience of museum work was also made one of the essential qualifications for recruitment to the post; in doing this, the Government recognized that museum management is a specialist job requiring a particular background of experience. Dr. Aiyappan's appointment ensured continuity of policy in the Museum from 1920 onwards and avoided the waste of effort resulting from lack of clear objectives, indicated above while discussing the reversal of aims at the time of Dr Thurston. Several of Thurston's contemporaries in the Museum profession did not agree with his views and the Government of the day do not seem to have really given any thought on the report of such a change of policy.

The period from 1941–46 were very bad years for the Museum. A great part of the Museum buildings and the grounds had to be handed over for an A.R.P. depot which was stationed in the Museum. The galleries left in our charge had to be used as store rooms for the cases, etc., removed from the buildings occupied by the A.R.P. depot. The most valuable among the collections, such as bronzes, copper plate grants, selected coins, relic caskets of Bhattiprolu, etc., were sent to places of safety in the interior. As the Amaravati sculptures were too heavy and difficult to transport, the Government ordered that they should be protected *in situ* in the gallery. The windows of the Rear Building wing housing the Amaravati and Hindu sculpture galleries were

bricked up, the ceiling strutted with teakwood supports and the sculptures completely sand-bagged. The reserve collections in Zoology were stored up in sand-bagged rooms outside the main buildings. The whole of the galleries on the first floor were evacuated. A second batch of Zoological collections was stored up in the Madras Christian College at Tambaram. Temporary exhibitions were organized during these years from time to time to keep up the interest of the public coming to the Museum, of course, in smaller numbers. When the war was over, it took us about six months to restore the exhibits to their original places, and it is most gratifying to record that not a single specimen was damaged while under storage or during the process of rearrangement.

Growing Interest

After the war, gifts and bequests began to be received at the Museum, which, though few, were symptomatic of a new attitude to the Museum. Sri T. A. Ramalingam Chettiar, Sri T. N. Seturaman Chettiar, Srimathi A. V. Kuttimalu Amma, M.L.A., the Raja of Ramanathapuram, the Raja of Karvetnagar, the Zamindar of Palayampatti and several others were among the donors. These gifts were spontaneously made and did not involve any effort on our part.

The increased interest of the Government in the Museum was shown in the longer reviews of the Museum annual reports and in the suggestions they contained. The Hon'ble Ministers in charge of the Museum and the Secretaries to Government in the State Ministry of Education often evinced personal interest in the Museum. His Highness the Maharaja of Bhavnagar, Governor of Madras, issued personal appeals for donations to the new National Art Gallery and Museum, the head of the State personally asking for public support of the Museum was an act of unprecedented graciousness on His Excellency the Governor's part. While, in the past, the Government had issued appeals for donations, never before had any Governor taken such a step, for which we are most grateful to His Excellency.

Honorary Correspondents of the Museum

In order to secure greater co-operation from officials and non-officials in the districts in the attainment of the objectives of the Museum and to stimulate interest in it among the general public, Government approved of our proposal for the appointment of five Honorary Correspondents of the Museum from each of the twenty-six districts of the Madras State. The Museum secures by this the semi-official services of 130 persons of culture and standing in their districts, which, indeed, is a great gain.

Notable Additions

The Dowlaishwaram hoard of gold coins of Raja Raja I and Kulottunga I got as treasure-trove in 1946 was a most interesting acquisition as the legends on some of the coins were in commemoration of the Chola conquest of Kedah in Malaya. In the same year was received an exquisite bronze image of Siva Natesa in the Pandyan style from Porupumettupatti in Tirumangalam taluk, Madurai district. In workmanship, it is excelled only by the world-famous Tiruvelangadu Natesa bronze. Four very impressive, life-size models in wood of Kathakali dancers, a model of the Brahmagiri cist burial of the early Andhra period, stone tools of the Peking Man, shadow-play figures from Malabar, Cuddapah and Bali, American Indian pottery and neoliths from the Peabody museum, bent-bar punch-marked silver coins of North-western India, rare minerals from Canada and Australia, painted churinga, boomerangs and a Kangaroo skin from Australia are among the notable recent additions.

Educational Work

From 1941 onwards, several conferences were held with the representatives of teachers' organizations in the city and new experiments were tried in the field of education through the Museum. Through the Radio, educational journals and gatherings of educationalists, the possibilities of using the Museum to supplement school activities were repeatedly brought to the notice of the teaching profession and the officers of the Department of Education. Gifts to schools which were trying to build up museums of their own were made from the reserve collection of antiquities of the stone age, early iron age and proto-historic periods. Surplus coins and plastercasts of coins also began to be regularly sold to schools and to other collectors.

In response to a request from the Director of Public Instruction to participate in the grand Educational Exhibition at Guindy, in December 1949, a "Model School Museum" was organized as one of the eight sections of the Exhibition. The object of the project was to demonstrate (1) how material could be got together and displayed in school museums to canalize the collecting spirit and curiosity of boys and girls and make them serve educational ends, and (2) how instruction in several school subjects can be made concrete through suitable museum material. By participation in the Educational Exhibitions every year, the Museum has definitely made its entry into the educational scheme of the Madras State.

In 1949, the first summer course in Museum Technique for teachers was organized by us, in order to help teachers of high schools in the State to equip themselves better for the task of organizing school museums. During the period, May 1949 to March 1950, three batches of teachers were trained.

(Details of the course are given in the Administration Reports of the Museum from 1949–50 onwards.) The enthusiasm shown by the teachers and Sri D. S. Reddi, Director of Public Instruction, was an index to us of the utility of the course. The Department of Public Instruction has recognized Museum Technique as one of the crafts for which teachers trained in it can draw the special craft allowance. The course in Museum Technique in 1951 was limited to two batches of 34 teachers from training institutions, in order that the teachers so trained may, in their turn, train other teachers. A handbook on museum methods for teachers has been completed and is expected to be published in the near future by us or by the Department of Education.

The Problem of the illiterate Visitor

A very large proportion of the visitors to the Museum, unfortunately, happen to be illiterate and unable to read the labels in English or in Indian languages. A visit to the Museum is often the only occasion which this class of visitors have of coming into contact with higher art, history and the natural sciences. The best way to make a visit to the Museum profitable to the illiterates and semi-literates is to have a number of guide lecturers who would explain the exhibits to them, but there are financial obstacles in the way. The next best device is to have records made of descriptions of important groups of exhibits and play them to parties of visitors. As an experimental measure a gramophone record was made of an account in Tamil of the special exhibition on corals. The Provincial Broadcasting Department installed a temporary public address system and this record was played to small groups of visitors, and their reactions were carefully watched by us. It became very clear to us that the visitors, including even literate persons, found this very useful and instructive. Proposals were sent up to Government for the initial installation of the public address system in the archaeological galleries, but sanction was not given to them. Later in 1949, two posts of Assistant Curators were sanctioned by Government, one for the Natural History sections and the other for the General sections. In addition to helping the Curators, these Assistant Curators act as guides to illiterate visitors. It is, however, difficult for the two Assistant Curators to attend to the very large number of illiterate visitors, over a thousand a day. To mete this problem a scheme was formulated after consultation with the educational authorities to utilize the services of city scouts. Accordingly, the scout authorities were approached in the matter, and they gladly volunteered to offer their services. Under this scheme, which is claimed to be the first of its kind in India, boy scouts were given short training on Saturdays and Sundays by the Assistant Curators. One hundred and three scouts were thus trained and certificates were issued to them permitting them to take the

illiterate visitors round the Museum. On Saturdays and Sundays when large number of illiterate visitors come to the Museum, these trained scouts by turn take them round the galleries. So far a few thousand illiterate visitors have enjoyed the usefulness of the scheme. As this scheme is found to be very useful, the training of scouts will be repeated every year in future. The number of illiterate visitors guided in 1950–51 was 14,660.

Special Exhibitions and Publicity

The collections already in the Museum and the additions made to them from time to time did not receive, in the past, the publicity which they deserved in an age of propaganda. We were obsessed all along by the conservative feeling that publicity through the Press, posters, etc., would tend to make the things advertised look cheap. Times, however, had changed, even the good wine needed a bush. So in 1946, a departure was made from the old practice to announce all notable accessions in the newspapers and also to hold special exhibitions of new accessions and of reserve collections, often preceded by popular, illustrated handouts for the Press. These special exhibitions have throughout been popular and brought to the Museum thousands of visitors who but for them would not have come to it. But, we do not, at present, have a suitable hall near the entrance of the Museum for such special shows though provision has been made for it in the

Class in Museum Technique

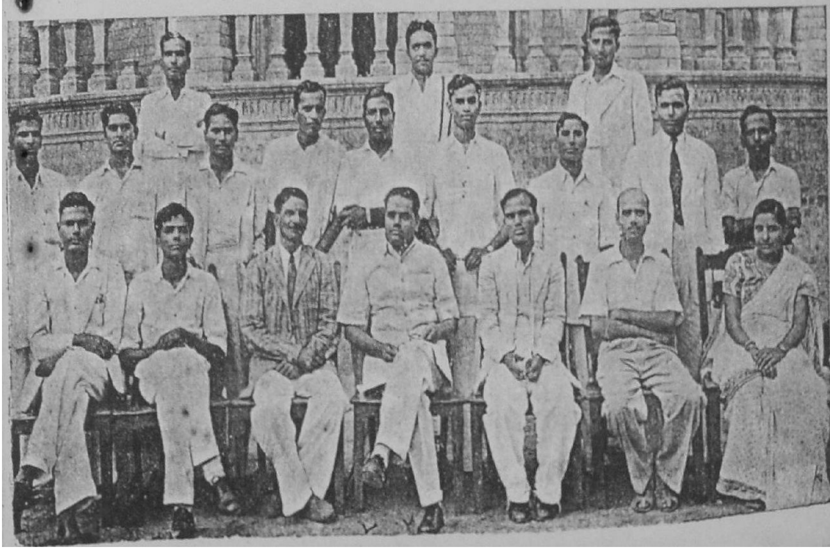
new buildings (yet to be built) sanctioned in G.O. Ms. No. 943, P.W., of April 2, 1946. The special exhibitions involve a great deal of extra work but they are well worth the trouble, for they enable the public to see several exhibits which cannot be exhibited for want of space. The rise in the number of visitors in 1949–50 to 720,291, the highest figure ever reached, should, to some extent, be attributed to the popularity of the special exhibitions.

In 1949, Government themselves suggested that we might consider how the Museum can be introduced to casual visitors by publicity done through posters and through Government publications. The first of these posters has been prepared and is being printed.

Trial Excavation at Arikamedu

In 1940, Prof. Jouveau-Dubreuil sent to the Museum a number of beads of glass and semi-precious stones, terracotta figurines and a variety of potsherds, and requested the Superintendent of the Government Museum "to do something for the site". In fact this was one of the last acts of the distinguished French archaeologist. Among the pottery were just a few which resembled one from Amaravati already in the Museum. With the financial aid given by the French India Government at Pondicherry,

Teacher Trainees at the Museum: Seated in the group in the front row are, from left to right, Sri S. T. Satyamurti (Curator, Zoology), Sri T. V. Satyamurti (Curator, Chemical Conservation), Sri V. Rao (Headmaster), Dr. A. Aiyappan (Superintendent), Sri P. R. Srinivasan (Curator, Archaeology), Sri M. S. Chandrasekar (Curator, Botany) and Mrs. G. M. Arputharaj (Assistant Curator)



trial excavations were conducted at Arikamedu, which revealed the foundations of several buildings. Amphorae and beads typical of the Mediterranean area were also recovered. Sufficient evidence was thus gathered to show that Arikamedu was one of the most ancient sites in Southern India. *The Hindu* of Madras gave the excavation very wide publicity through a special article contributed by the Superintendent. The information was passed on to Dr. Mortimer-Wheeler, just then appointed Director-General of Archaeology in India. Dr. Wheeler required some amount of persuasion initially, but when among the pottery he saw sherds with definite Roman influence, he took up the excavation at Arikamedu which proved so fruitful. Thus the Madras Government Museum for the first time in its history undertook trial digging and became directly instrumental in getting a most important piece of archaeological work done.

The experience gained in connexion with the work at Arikamedu made us recognize some important points concerning the future activities of the archaeological section of the Museum. In these galleries, we have as good a series of sculptures, etc., illustrating art and history as it is possible to gather, to which additions can only be limited. The same is the case with other branches of archaeology. What is desirable to be undertaken was the gathering of new types of material which can be got only by the Museum itself undertaking minor excavations, in co-operation with the Archaeological Survey of India. With this object, the then Curators for Archaeology and Anthropology and the Superintendent attended the training courses in field archaeology conducted by Dr. Mortimer-Wheeler. But owing to limitations of funds and difficulties of personnel (the Curators who received the training left the Museum), this plan of action could not be pursued further. Conditions are propitious now for this to be done, especially as archaeology is a concurrent subject according to the new Constitution of India, and State Governments have an added responsibility in the matter of furthering archaeological investigations.

The Pudukkottai Museum

After the merger of the Pudukkottai State with the Province of Madras in 1948, the Government ordered on January 31, 1949, that the Pudukkottai Museum should be a regional Museum under the control of the Madras Museum. Historically viewed, this becomes interesting, as once again the Museum at Madras had at least one branch Museum, an event which might have delighted the spirits in heaven of Balfour and Cullen! As we look into the future, it seems probable that more local museums will be started in the future. Proposals will soon be before the Government to amend the Madras Library Act to make it possible for local bodies to spend part of the library cess on local museums.

Art Gallery

In 1941-42. 77 pictures belonging to the School of Arts which were about to be sold were transferred to the Museum. Copies of a few murals of Ajanta, Sigiriya, Panamalai and Central Asia, and a small number of paintings by modern artists were purchased by us for small amounts. In 1946, the South Indian Society of Painters was organized at Madras through the efforts of Col. D. M. Reid and Dr. A. Aiyappan and from the beginning the Society had the latter as one of its secretaries and its office in the Museum House. The South Indian Society of Painters is the successor of the old Madras Fine Arts Society which became defunct somewhere about 1927. Periodical exhibitions of the works of modern Indian painters and occasionally of artists of foreign countries were held at the Museum under the joint auspices of the South Indian Society of Painters and the Government Museum, which, for the second time in its history, began to do its bit for modern art. Mr. Affandi of Indonesia, Mr. F. H. E. Halpern of Austria and Mr. Kanwal Krishna and Mrs. Devayani Krishna were among the artists who had one-man shows at the Museum. Again, the Government in their order Ms. No. 2492, Education, dated 4th August 1949 sanctioned the renting of a hall belonging to the Victoria Technical Institute (this hall is a low tiled building behind the Victoria Memorial Hall) to be used temporarily as a Picture Gallery. This was done to satisfy the condition in Sri T. A. Ramalingam Chettiar's gift of four paintings to the Museum.

The efforts that originated from the Museum from 1941 onwards which were supported by private donors and the South Indian Society of Painters, culminated in 1951 in the Government finally giving their approval to the organization of the National Art Gallery of Madras and taking the Victoria Memorial Hall for the purpose on a rent of Rs. 500 per mensem.

Looking over the history of the artistic enterprise of the Museum, we might say it took over sixty years for Thurston's idea of an Art section of the Museum to get into its final shape.

The Pantheon Hodie Museum

By Prof. C. S. SRINIVASACHARI

THE NUCLEUS OF the Government Museum Buildings was known as the *Pantheon*, also as Public Rooms or Assembly Rooms; and it was utilized for dinners, balls, and dramatic performances by the European colony of Madras from the last decade of the 18th century. It was built by public subscription certainly before 1789, as the Public Consultations, of Fort St. George, of 22nd December 1789, contain a reference to the exclusion of Sir Paul and Lady Jodrell from the Public Rooms. Dr. John Anderson[1] of botanical fame is known to have had a mulberry plantation in its gardens. On the 10th October 1793, an entertainment was given therein to the Marquis Cornwallis and the hostage princes, sons of Tipu Sultan of Mysore then at Madras. Lord Clive, Governor of Madras, from 1798 to 1803, gave several balls and suppers at the Pantheon in 1802: and three years later a grand public entertainment was given there to General Sir Arthur Wellesley (later the Duke of Wellington)[2]. Similar grand entertainments were accorded there to Lord Melville in 1807, to Samuel Auchmuty, the Commander-in-Chief, to Sir George Barlow, Governor, and to Lady Barlow independently of her husband. Subscription dances were also arranged therein and were regulated by a master of ceremonies.

The estate of the Pantheon was the property of Hall Plumer, civil servant and contractor for Public Works and assigned by him towards the end of 1793

[1] Dr. John Anderson began his service in the East at the siege of Manilla. He rose in 1771 to be one of the two Presidency Surgeons and subsequently Physician-General (1786). He was a celebrated botanist and noted for his culture of the cochineal, and for his *Nopalry* and Botanic Garden as well as for his cultivation of the mulberry and aloe and encouragement of sericulture. He paid attention to other plants of commercial value such as the sugarcane, coffee plant, the American cotton and the European apple. After his death in 1809, a tablet was erected to his memory by Chantry in St. George's Cathedral; and his tomb in St. Mary's Cemetery had originally a bust placed over the tomb-stone. Anderson's name was the most distinguished in the medical annals of Fort St. George. What is germane to our purpose is that he was an ardent advocate of vaccination

[2] A dinner was given to the General at the Pantheon in March 1805. We learn from the Madras Government Gazette, 7th March 1805—" On Saturday last (1st March) a grand Dinner was given at the Pantheon by the Officers of His Majesty's and the Honourable Company's Services at the Presidency to Major-General the Honourable Sir Arthur Wellesley, K.B. . . . The ornamental part of the Rooms had been somewhat altered—A most animating Picture of the Honourable General, painted by Home, was placed in the centre of the Theatre, with the General's Arms on the right, and the Order of the Bath on the left—The Arms of His Majesty, brilliantly illuminated being over the entrance door.

to a group of gentlemen who apparently formed the Pantheon Committee. They disposed of the property in 1821 to E. S. Moorat, a wealthy Armenian merchant; and it was subsequently purchased from the latter by Government in 1830 for Rs. 28,000. The property was originally 43 acres in extent and stretched from Casa Major Road, to the present Police Commissioner's Road; and it was flanked by the present Pantheon and Hall's Roads on the sides. Portions of the extensive compound were disposed of either by Plumer himself or by the committee of entertainment; and only the central portion including the house, was sold to E. S. Moorat, the Armenian millionaire. Thus after use for a number of years as a ball and dance-room as well as a theatre, the Pantheon remained shut up for some years as one of "old Moorat's" "old houses", till Government wanting a substitute building for the Collector's Cutcherry bought it and made it the Land Customs House. In the map of Madras of 1837 it was indicated as the Pantheon or Collector's Cutcherry. Eventually, it was converted into the Central Museum. When the Pantheon was used as a theatre—even now it has got a theatre *annexe*—greatly was Madras society smitten with love of the stage. From 'Philomath', we learn as follows: "To account for the origin of the building it is needful to go back to about the beginning of the present century, when Madras was very Grecian in taste; Grecian couches with chintz covers. printed with uncial Greek letters, Grecian tripods and lampadas: of course, plays also. A considerable number of civilians and officers had been smitten, in early life, with Garrick's and Kemble's performances, and were stage-struck themselves. It became necessary to build a theatre and it was done. A Stage Manager was commissioned from England and a Mr. Rowbotham was imported in that capacity. By his instructions, the roof over the stage was laid with iron grooves, so that a heavy cannon shot being rolled over them produced a mock thunder. The *corps*

"On Thursday evening, the Civil Servants at the Presidency gave a magnificent entertainment at the Pantheon to Major General the Honourable Sir Arthur Wellesley, K.B. . . . The Public Rooms were ornamented with a variety of excellent transparencies suited to the occasion—Immediately over the door, the Arms of the Honourable Company were displayed—On entering *the Theatre*, the initials G.R. and the Royal Motto. On the right, the Arms of the General with the word *Assaye*, and a Motto appropriate to that splendid, gallant and decisive victory—*Viget in arduis*; on the left, the decorations of a *Knight* of the Bath, under which was the word *Argaum*.

"The whole of the above were executed in a masterly stile (*sic*) and had a most pleasing and grand appearance.

"Upwards of five hundred persons, including the principal inhabitants of the Settlement being assembled, the Ball was opened by Sir Arthur Wellesley leading down the Right Honourable Lady William Bentinck.

"The two sets of Dancers extended of necessity to a great distance, reaching from the front Boxes of the Theatre, to the entrance door of the great Room.—being the whole length of the building."

dramatique were trained and disciplined. The male characters were gentlemen amateurs. For the female characters, some young East Indians were selected; the most famous was Pratt, who died early in full theatric celebrity; next Battle (afterwards a shop-keeper), then Sinclair, who obtained a commission; and there was another Pratt, a brother, whose theatricals, poor man, drove him mad. Who the male performers were the Muse never recorded, though some of them might be guessed at; and one of them certainly lived to be an honourable Member of Council."

On its transformation as the Museum, two wings with two spacious interior apartments were added to the nucleus building. At the same time a portico on the colonnade and the upper storey were built. The original Pantheon Building led from the entrance door by a few steps into a large oblong hall, and from its back there projected a narrow platform from which further steps led into another oblong hall with a room to the south. The entrance hall was for the audience; the space behind was filled in by the orchestra and the hall above was for the stage and green room. When the Pantheon was purchased by E. S. Moorat, Government allowed dramatic performances to be conducted in the Hall of the house which they had purchased from Moorat for the location of the Old College (or Writers' College) *for the training of Junior Civil Servants* and which was subsequently used for the location of the office of the Director of Public Instruction.

Edward Samuel Moorat was the spendthrift son of Agah Samuel Mackertish Moorat, an Armenian merchant of great wealth at Madras. He lived in great style in the bungalow known as Moorat's Garden (the Old College) which he owned, besides the Pantheon and the Umda Bagh. He died in 1837 and was buried in the Roman Catholic Cathedral in the Armenian street.

W. T. Munro Philomath, author of *Madrasiana* (1868) says that the entire compound of the Pantheon formed a spacious square with two front gates, over each of which a board informed the passer-by that the building was the Central Museum, which in his days was of no great handsome external appearance.

A Government survey map of Madras, drawn in 1798, and to a scale of 900 feet to an inch and coloured, shows the Pantheon as situated in a compound of immense size, and the Pantheon Road extending from the river to the Presidency Magistrate's Court which was then only unbuilt open ground. The Pantheon Road is marked by a group of four large buildings, one of which was the College Bridge House.

So the Pantheon of old has become the Museum of the present.

PART III

REMINISCENCES

This part contains reminiscences of three former officers of the Museum. The story of the mutual interaction between the institution and the workers in it is of interest. We see how they grew with the Museum

Reminiscences of the Madras Museum

By Dr. F. H. GRAVELY
Superintendent (1920–1940)

THE COLLECTION, INVESTIGATION and exposition of museum specimens are full of interest. When perused with the aid of a keen and co-operative staff, they are deeply satisfying. My memories of the Madras Museum are therefore extremely pleasant ones. Foundations had been well and truly laid by my predecessors. When I arrived in 1920, it had outgrown them and was badly understaffed, but within a year some relief was given by the addition of a full-time Sub-Librarian for the Connemara Public Library, of which the Museum Superintendent was then in charge. And, though the Museum was hopelessly congested, two new galleries were nearing completion, giving scope for necessary expansion and further progress.

These new galleries were extensions of those devoted to Zoology where the reasonably numerous Vertebrate specimens could not be satisfactorily shown and Invertebrates were quite inadequately represented. Vertebrates were therefore spread out into them but for the Invertebrate gallery, many additional specimens had to be collected.

At the request of the Indian Science Congress in 1922, Government abandoned their proposed sale of Krusadai Island and enabled the Fisheries Department to establish a much needed marine biological station there, to be used not only for the Department's own experiments but also for the training of University students in marine zoology— a most important part of every zoological degree course for which no field facilities existed in India. This station was naturally intended to develop along the lines of the European biological stations where many of its advocates had worked, among them Dr. K. N. Bahl whose presidential address to the Zoological Section of the Indian Science Congress had led to the resolution urging its foundation. But in Europe the establishment of such stations had been preceded by many years of careful investigation of shore life, largely by amateur but none the less able naturalists, the results of whose work were readily available to their successors in books and scientific journals. Thus from their start these European stations had works of reference to guide those who came there for study. Very few such works were available concerning the animals and plants of Indian shores and virtually none for the Invertebrata, which include the groups of chief importance in the training of students.

Since the Museum had particular need of Invertebrata for its galleries, the obvious solution was for me to collect specimens at Krusadai Island, have them worked out and get the results recorded in a form suitable for use by students. Government had already approved the revival on a larger scale of the small Museum " Bulletins " which had been issued for a time by Mr. Thurston and Mr. P. V. Mayuranathan was already preparing the first volume sanctioned, that on " The flowering Plants of Madras City and its Immediate Neighbourhood," enthusiastically supported by Mr. E. Barnes of the Madras Christian College. Sanction was obtained for a volume dealing with the littoral fauna of Krusadai Island, the first half of which was published in 1927, the volume of Madras flowering plants following it in 1929. Work on the fauna of the island necessitated a number of visits, always as delightful to me as they were useful and interesting, particularly when I was able to make them coincide with a visit by students from one of the colleges and have the benefit of their co-operation in collecting and the pleasure of their company. Throughout I had invaluable assistance from the Zoological Curator, Mr. H. Chennapayya, and his helpers in dealing at headquarters with the specimens obtained, labelling and storing those to be kept in the research collections and mounting for exhibition those needed for the public galleries.

Sri H. Chennapayya, Curator for Zoology 1916-1942

In the Archaeological Section, I had at first to feel my way more slowly. For Indian archaeology, much to my regret, was still a closed book to me when I reached Madras. Since my school days, I had, like many of my schoolfellows, been able easily to distinguish the different periods of English churches and cathedrals by simple and well-known characteristics, following each other in logical historical sequence and so had been able to take an intelligent as well as an aesthetic interest in what I saw. When visiting Indian temples, I longed to be able to do the same but was incapable, from lack of knowledge, of anything beyond blind wonder. Shortly after I came to Madras, the Boy Scouts Association in England published in

"The Scouter" a series of articles on how to look at English churches, and Indian scouters asked me to write something of the same kind of the Mahabalipuram temples for "The South India Boy Scout." This seemed impossible till Mr. R. Srinivasa Raghava Iyengar, Assistant for Archaeology, called my attention to Prof. Jouveau-Dubreuil's English summary of the architecture volume of his "Archaelogie du Sud de I' Inde" prepared at the request of Prof. S. Krishnaswami Iyengar and published by the Diocesan Press of Madras. Here I found exactly what I had so long wanted, though unfortunately for the temples of the Tamil country only. It enabled me not only to write "How to look at a South Indian Temple" for "The South India Boy Scout" but also, with Prof. Jouveau-Dubreuil's wholehearted help, to fit a small gallery with photographs illustrating the development of temple architecture in the Tamil country and to work up a lantern lecture with a view to popularizing the subject in schools and colleges.

Till about this time the Museum had had but a single Archaeological Assistant. He had had to try as best as he could to sort and record all treasure-trove and other coins, sculptures, etc., and this work had consequently fallen seriously into arrears while wider archaeological work could not even be attempted. Government therefore now sanctioned an additional post, Mr. Srinivasa Raghava Iyengar taking charge of numismatics and Mr. T. N. Ramachandran being appointed to deal with the rest of archaeology, including the Museum's unique collection of South Indian bronzes, a catalogue of which was long overdue Mr. Ramachandran had the information required for its preparation, but being fresh from college without wider experience he naturally did not understand how to set about preparing the kind of catalogue needed. We therefore decided that he should provide the information and I should do the writing, and that we should publish it jointly, a plan which proved so helpful to us both that it was later extended to further papers.

Sri T. N. Ramachandran, Curator for Archaeology, 1925–1935

Long before the catalogue of bronzes was finished, however, we had the delight and excitement of receiving in the Museum, quite unexpectedly, from

Prof. Jouveau-Dubreuil, the sculptures of the Buddhist stupa at Goli, and Mr. Ramachandran's first work to be published was an account of them.

Because of its direct educational value we continued whenever opportunity arose to study the development of Tamilian temple architecture. In pursuance of this, we visited several important temples together, identifying the periods of different buildings by their architectural or decorative characteristics and checking these identifications, wherever possible, by reference to such inscriptions as we could find upon them. The essentials of these, Mr. Ramachandran never failed to translate for me quickly and apparently without difficulty. The Jain temple at Tiruparuttikunaram near Conjeevaram, with its sequence of styles, its numerous inscriptions and its ceiling paintings illustrative of Jaina mythology, suggested itself as a suitable subject for detailed study on these lines, and Mr. Ramachandran turned his enthusiasm to this as soon as the Goli sculptures and catalogue of bronzes were off his hands. Little did he dream of the size of publication that would result, nor of the length of time the task would demand. But it proved to be well worthwhile, not only for its own sake but also for the link with the Jaina religion which it established.

As yet, we had however no knowledge either of the history of temple architecture outside the Tamil country, or of the relation of Tamilian temples to others. Curiosity in these directions led to the preparation of our second joint paper " The three Main Styles of Temple Architecture recognized by the Silpa-Sastras " and from that to my " Outline of Indian Temple Architecture." In the latter I stated the general conclusions at which I had arrived in order that they might be criticised before the time was fully ripe for the writing of a popular guidebook to the archaeological galleries.

Sri C. Sivaramamurti, Curator for Archaeology, 1935-1946

By this time Mr. Ramachandran was busy preparing a catalogue of the Museum's magnificent collection of Buddhist sculpture from Amaravati. While this was still at an early stage, he was appointed to a post in the Archaeological Survey of India and had to pass it on for completion to his successor, Mr. C. Sivaramamurti, who brought

with him to the Museum valuable new talents and information. But almost at once he had to concentrate his attention on the complete rearrangement of the Archaeological Section, made possible at this time by the erection of new galleries into which it could be extended with an exhibition of Indian sculpture arranged chronologically as its central feature.

Much fresh material had to be collected and to this task Mr. Sivaramamurti applied all his enthusiasm and already extensive knowledge.

Serious problems arose over the housing and effective display of some of the specimens received, such as the early Eastern Chalukyan elephants and dvarapalakas. Nor was acquisition by any means always easy. For instance, after Mr. Sivaramamurti had collected all the beautiful and important sculptures he could find exposed to wind and weather among the revetments of the Kaverippakkam tank bund—including *among the many Tamilian ones a single corbel in Chalukyan style and presumably therefore from the temple* known to have been built there by the Rashtrakutas—and after he had loaded them on to carts and arranged for their transport to Madras, the villagers suddenly went back on their agreement and began to be as difficult and obstructive as they could. When he eventually succeeded in getting the collection away and the carts arrived at the Museum, he took their drivers into the galleries where they exclaimed that the Museum was like heaven, all the gods being there, and that of course their sculptures ought to be there too.

Every obstacle having been overcome, the galleries were finally arranged and opened and the long planned guide published, together with additional illustrations of sculpture. In the production of these two neat little books at the lowest possible price, the Government Press gave us their usual helpful co-operation. That a real need was met has been amply shown by the rapidity with which they sold and had to be reprinted.

Digressions into Archaeology left me during this period little time for my own special subject, Zoology. For this and other reasons the Natural History series of Museum Bulletins began to show signs of collapse and exchange of publications consequently suffered. When I walked in the evening on the beach with my wife and children, the children of course used to collect the shells they found and it occurred to me that a paper which would help people to identify shells and other animal remains found there would be locally useful and at the same time provide something to bridge the widening gap in the Natural History series of Bulletins. Thanks to valuable help with identifications from the late Mr. R. Winckworth I made a start, expecting to complete

the work before retirement. Soon, however, I came into touch with the late Mr. M. D. Crichton, then Manager of the Madras branch of the National Bank of India, and found that he had already amassed a far larger collection of Madras shells than I could hope to do merely with the help of my children in the course of our somewhat casual visits to the beach. Mr. Crichton generously placed his collection at my disposal for the purposes of my paper, of which it thus came to form the main basis.

I naturally wished to be able to include in the paper, some record of all the most important Indian types of shell but three of them long evaded us—the genera *Turbo* and *Nerita* and the family Strombidae. Eventually I located two species of *Nerita* on a flight of steps to the harbour arm and Mr. Crichton secured two small species of Strombidae. But Turbo, so abundant on Krusadai Island, seemed completely absent in our area. Not even a worn fragment of its comparatively large, distinctive and apparently strong shell could we find. One evening, however, I tried climbing down among the concrete blocks in the seaward angle between the short pier to the harbour entrance and the end of the harbour arm. Here to my amazement I found full-sized living specimens not singly but in the greatest abundance. Thereafter this place became one of our favourite collecting grounds. Unfortunately the outbreak of war caused the closing of the harbour, except for essential business, before we had investigated the outerside of the pier on the landward side of the harbour entrance.

Mr. Crichton's collection swelled my paper far beyond the size I had originally contemplated with the result that it had to be issued in two parts, both of which were published after my retirement and time did not permit me to make the observation on habits, etc., of living specimens of the various species, which ought to have been included. After Mr. Crichton's untimely death subsequent to a torpedo attack when on his way home after retirement Mrs. Crichton kindly presented most of his collection to the Museum. But unfortunately some of his best specimens perished with him.

This is not a history but a series of reminiscences of some of the highlights in twenty very happy, and I venture to think, fruitful years. Space will not permit me to dwell on subjects other than the two which occupied the greater part of my time. But my omission of others, such as the electrolytic method of restoring corroded bronzes developed by Dr. S. Paramasivan to meet the needs of our largest specimens, the anthropological work of Dr. A. Aiyappan and the work done by Mr. V. D. Krishnaswami on prehistoric implements, must not be allowed to suggest that I was less appreciative of these important

activities, nor look back on them with less interest. Neither can I close without paying tribute to the helpful efficiency in the Museum office of my Personal Assistant, Mr. M. D. Raghavan and my Head Clerk, Mr. D. Rajagopala Aiyangar and their staff. For their services greatly lightened my administrative work, thus permitting me to devote the greater part of my time and energy to the development of the educational facilities of the Museum and to the research which this demanded.

Reminiscences

By Dr. B. SUNDARA RAJ

MY CONNEXION WITH the Madras Government Museum started from my undergraduate days in the Madras Christian College in 1907 when my Professor of Biology, Dr. J. R. Henderson, acted as Superintendent of the Museum and used to ask me to help him with butterfly and moth collections. One of my earliest recollections as an undergraduate is the vacation that I spent at "Mountain Home", the holiday hostel of Dr. Miller. The many excursions with Dr. Henderson to places of interest on the Shevaroy Hills were the earliest training I received in field natural history, but for which I could not have headed the list of graduates in 1909.

Subsequently as tutor and lecturer in Zoology from 1909 to 1912, my close association with the Museum began. I often went on tours as the guest of the Acting Superintendent and helped in forming up-to-date collections for the Museum, particularly in the fish galleries where my collection of fresh-water fish, which was the subject of my thesis for the M.A. degree, was exhibited.

Dr. B. Sundara Raj

I joined the Museum as Zoological Assistant to Dr. Henderson in 1913. My association as a student with the Museum was an exceptionally favourable training for my subsequent career as a Government scientific officer, which it is the privilege of few to have. Administrative and office routine often bulk large in Government posts and tend to occupy the whole attention and time even of scientific and technical officers. These duties have often sounded the

death-knell of more important research activities even of men with brilliant academic qualifications from whom much was expected. If I have to some extent escaped such a fate and kept alive the spirit of research, it is due entirely to the early training as a naturalist I received in the formative years of my undergraduate and graduate days under a professor who was well known in South India as an accomplished teacher of Zoology and a keen naturalist.

On the staff of the Museum I had absolute freedom of action and great opportunities for collecting and studying South Indian fauna. One of the important changes undertaken during my three years of service in the Museum was the scheme to exhibit animals in their natural surroundings. The nest of the water-hen in bulrush, those of the kingfisher and bee-eater in horizontal burrows in vertical banks and the section of the burrow of a trapdoor spider from Madras City, a group of flamingoes from Pulicat Lake, the section of the termite nest from Mysore and the group of flying squirrels with their nesting place in a hollow tree from Coorg, deserve mention. Another new activity inaugurated after I joined the Museum was a regular series of lectures for school and college parties in the Galleries. The Museum then had a zoo for small animals. Among the diversions provided by wild life in custody may be mentioned our experience with the female krait which had lived peacefully for years in the Museum zoo. A male krait of about the same size was bought and lodged in the same cage. The next morning, however, to the dismay of all, the newcomer had completely disappeared. The escape of a poisonous snake in a Museum open to the public caused great concern until the female krait refused food and was seen to be unusually large and sluggish. It was then realized that kraits can account for snakes of even their own size and in this instance it was the newcomer which was inside his mate. One day, for the first time, a live pangolin was brought to the Museum for sale. Dr. Henderson warned me that it was a very powerful animal and was difficult to keep in captivity. It was put in the strongest cage available with iron bars reinforced with a stout chain and padlock. The next morning the pangolin was nowhere to be found, to my great consternation. After hours of search it was found hiding under a road culvert. An unusual exhibit brought for sale was a large bull frog with the tail of the snake it was supposed to have swallowed sticking out of its mouth. The story was discredited and the exhibit unhesitatingly refused as a fake. Later a bull frog of exceptional size was netted from the Museum pond. For want of suitable accommodation, it was placed with the water snakes. To our great surprise the bull frog was caught the next day in the act of swallowing a snake.

Judging character is an important lesson to be learnt by a recruit to Government service. A highly-recommended and presentable ex-soldier was selected

by me as Gallery Assistant ("Oomal"). After his appointment a curious shrinkage of spirit in the Museum specimen jars began to occur. Everybody was puzzled until one morning the newly appointed attendant was found dead drunk in the gallery and the preserved snakes and frogs dry in the Museum jars.

I had also the unique experience of administering the Madras Aquarium as part of the Museum and again later as Director of Fisheries when it came under the Fisheries Department. The task of checking the rapid increase of maintenance charges and leakage of gate collections which began seriously to dwindle under the charge of an illiterate fisherman as head keeper was assigned to me. Of course this was resented by the head keeper. For enforcing certain obvious measures of retrenchment and reform I had to take charge of the Aquarium and the head keeper took his revenge. That night all the fish began to vomit, necessitating the cleaning of every tank through the night and feeding the fish again on carefully supervised food. When it was brought to the notice of the head keeper his explanation was that such mishaps were inevitable if inexperienced persons were put in charge of the Aquarium.

Looking back on the first three years of my Government service which were in the Madras Museum I cannot help realizing how valuable a training ground it was for research and administration, an unusually large share of both of which fell to my lot as Director of Fisheries in Madras and as the organizer of a Department of Fisheries in the U.P.

What I owe to the Madras Government Museum

By Sri S. N. CHANDRASEKARAN, M.A.

Retired Government Lecturing and Systematic Botanist and Vice-Principal, Agricultural College and Research Institute, Coimbatore

I THANK DR. AIYAPPAN, Superintendent, Government Museum, Madras, for having given me an opportunity to contribute a short note to this volume as one who was connected with the Madras Museum even though it was only for a very short period.

It was on the forenoon of 9th July, 1919, that I joined service in the Madras Museum as Botanical Assistant when Mr. H. Dodwell was Superintendent-in-charge. It is now more than three decades and as I look back to those days of my service in the Museum, it gives me no small amount of joy. The museum to-day has much expanded in keeping with modern conditions when every minute, nay every second, something or other is added to every branch of science by way of knowledge. Among other sciences, Biology has made such rapid strides in the last two decades which no other science could boast of and the Museum being a repository of scientific knowledge has to be growing and growing as rapidly in its volume. However I feel happy to-day that I worked at the foundations for a year and laid, in all humility, the bedrock on which the stupendous structure is being put up, flat after flat, by my successors with their skilful hands.

Sri S. N. Chandrasekaran, Botanical Assistant, 1919–1920.

There were then, my esteemed friend and colleague Sri H. Chennappayya, M.A., L.T., in charge of the Zoological section, late Sri Sreenivasaraghavan, M.A., in charge of the Archæological section and myself in charge of the Botanical.

Economic and Ethnological sections. There were two taxidermists and the ministerial staff. Mr. H. Dodwell was the Superintendent-in-charge. Dr. F. H. Gravely joined a few months later after I had started life in the Museum. Sri H. Chennappayya was my 'guru' who put me into the routine ways of official life as I was just fresh from the College, having finished my post-graduate course for M.A. in Botany in the Presidency College, under the late Prof. P. F. Fyson. During the year 1918–19 (the year prior to my joining the Museum) when I was doing the final year post-graduate course for the M.A. degree, I was also part-time lecturer at the Women's Christian College, Nungambakkam, where I had to handle the fourth year Botany Main and the Intermediate classes. This had helped me to collect specimens for the Museum of that College. When I joined the Government Museum, the experience gained in teaching and collecting and pressing specimens was very useful. Students of the high school classes from the different schools in the City used to visit the Museum by previous engagement and assistants in charge of the sections would take them round their respective sections and explain things of interest. I found the students very responsive which enthused me for hard work and interest in the work. There was of course the routine side of the work, replacing old specimens and labels, adding fresh specimens to the shelves and so on.

I believe Dr. F. H. Gravely joined the Museum some time in December 1919. I have a very pleasant memory of the six months I served under him. Dr. Gravely was known for his keen intellect, diligence, alertness and enthusiasm for scientific work. He is one of those whom I might describe as a top-ranking scientist. He was then a bachelor and I believe a Quaker. I was his Tamil interpreter as he had just come from Calcutta and knew only Hindustani. In that capacity, I had opportunity to study his large-heartedness, goodness and love for service. But it must be remembered he was a great disciplinarian. In fact he hated laziness and shirking of duty. Dr. Gravely used to be up very early in the morning, simply clad and with a sweet smile almost divine in its expression; he used to go round the various sections to see that things were tidy, the attendants were at their spots and the visitors reaped the full benefit of their excursions to the Museum. There were some, particularly in the ministerial staff, who had to throw off their old lazy habits and keep themselves energetic as they were in constant dread of the Superintendent's surprise visits. If I may be permitted to say, there were in fact some people envious of my colleague Mr. Chennappayya and myself for whom the Superintendent had a special liking and whom he consulted on many matters connected with the Museum. All this was because we were, in all humility I should say, hardworking and loved the Superintendent and therefore loved to labour and profit from it. Dr. Gravely would sit for hours at his dissecting table

with the microscope. Everyone knows he was an authority on spiders and did much original work in that line. He was equally a good Botanist and as such gave me enough work which on neat and quick execution got from him a quick and generous appreciation. He was a keen lover of plants and had a Burbankian eye for aesthetic gardening and selection. I know how he brought rare plants from their wild habitats from the different places which he visited on collection tours and grew them with fondness which is rare, in the Museum compound round about his bungalow. The beautiful *Caralluma* just to mention one example of the several interesting xerophytic plants he collected and grew, several orchids, *begonias*, etc., are still green in my memory.

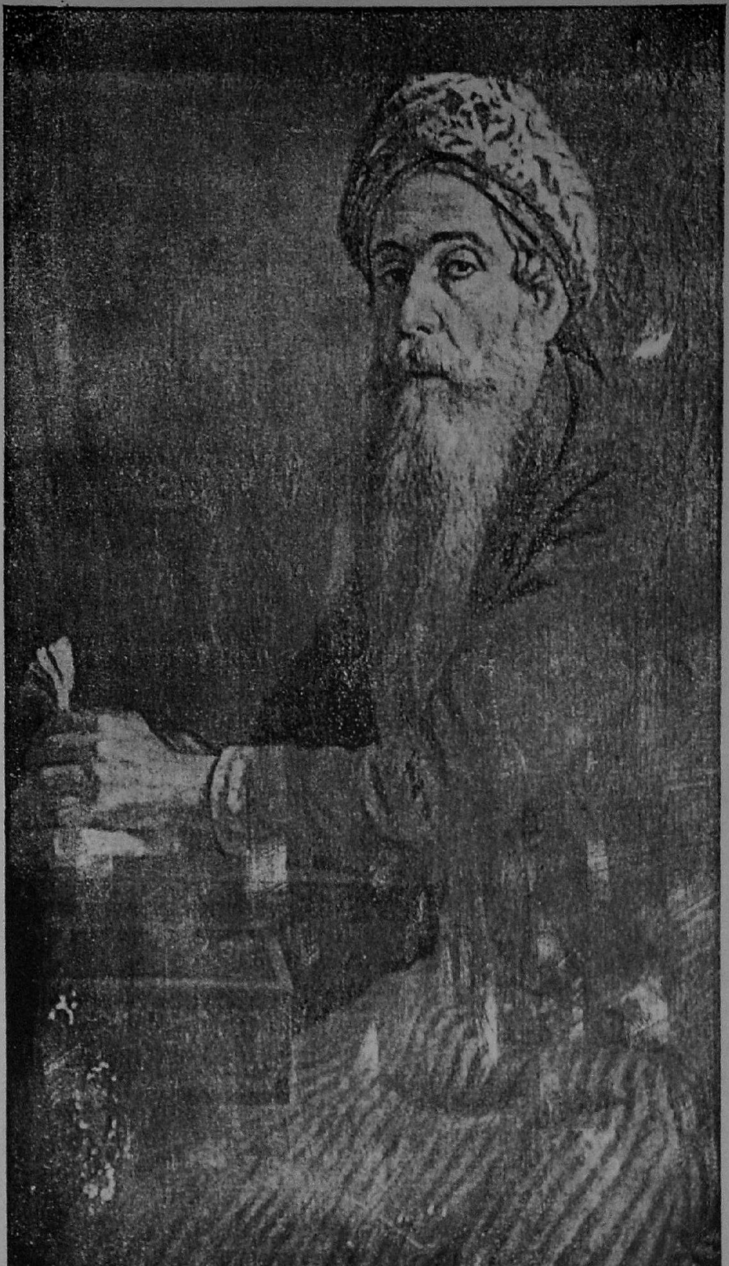
Dr. Gravely encouraged scientific work. I prepared a catalogue of the Economic Products in the Museum which was the first to be published on the subject and when I took up the manuscript to him he said, "you have included my name along with yours under authorship, you have done the work and not I and so please delete my name". In July 1920, I sought and got a transfer to the Agricultural College and Research Institute as an assistant in Botany in the section of the Government Lecturing and Systematic Botanist and Dr. Gravely made the following endorsement on my application to the Principal, Agricultural College, dated 7th June 1920, a copy of which I am still preserving out of love to my master as I may call him from whom I learnt many things: "Forwarded and strongly recommended. During the short time that Mr. Chandrasekaran has been working under me he has proved himself extremely useful and was always pleasant to deal with. I shall be very sorry to lose him. (Signed) F. H. Gravely, Superintendent, Government Museum".

Before I conclude, I wish to say that I started my official life in the Madras Museum which I love with all my heart as it laid the foundation for my future life and ended in the Agricultural College and Research Institute from which I retired as the Head of the Botany Department and Vice-Principal in August 1950. During these full thirty years of mine, every time I worked on a plant, my mind went back to the Museum. I wish the Museum all success and I wish it grows from strength to strength. It is a pity Museums are not visited as much and as frequently by the public here as in the Western countries and it is my desire that with more and more education imparted to the masses they will fully realize the importance of knowledge and go to the Museum where they could spend days and days, why, years and years, to draw from that unfailing fountain all that they want to learn about nature and her glory.

PART IV

DESCRIPTIVE—PEEP AT THE GALLERIES

In this part, the Curators of the scientific sections of the Museum draw attention to the most interesting among the collections in their charge and the Archaeological Chemist in India describes the Chemical Laboratory which he built up while he was on the staff of the Madras Museum



Study of a Jew—By Ravi Varma

The Zoological Galleries

By Sri S. T. SATYAMURTI, M.A.
Curator, Zoological Section

AT a time when we are celebrating this memorable landmark in the history of the Madras Museum, it is with feelings of profound admiration and gratitude that we look back upon the multifarious achievements of the Zoological section of this Museum which have been accomplished through the patient and untiring efforts of its unostentatious staff guided by the expert supervision of a succession of able directors, whose powerful initiative, unflagging enthusiasm and an infinite capacity for organization have contributed not a little to the building up and maintenance of the vast array of Zoological collections that the visitor is privileged to see in this Museum to-day. The century that has just passed by has witnessed a record of steady improvement and expansion in all aspects of Museum work relating to the Zoological section since the time of inception. Apart from the skill, patience and laborious work involved in the collection, preservation, display, arrangement and interpretation of the exhibits in the public galleries, a great deal of effort had been concentrated on various other fields of Museum activity, such as the building up of a substantial reserve collection for research and reference purposes, the organization of planned collecting tours, faunistic surveys and systematic researches on various groups of animals collected by the Museum, the publication of the results of these researches in a valuable series of bulletins issued by the Museum and various kinds of educational services, particularly to schools in the City. The Madras Museum has therefore to its credit a century of useful service as an educational institution in the City, and it is earnestly hoped that the sphere of its usefulness will continue to expand in the years to come.

On this historic occasion it would perhaps be appropriate to picture to our readers a few of the more spectacular and outstanding exhibits in the public galleries of the Zoological Section. The largest and probably the most reputed and valuable of these exhibits is the gigantic skeleton of the Great Indian Fin-Whale (*Balaenoptera indica*) suspended from the centre of the ceiling in the Hall of general exhibits at the commencement of the Zoological

galleries. The whale from which this skeleton was prepared was a fair-sized specimen measuring over 60 feet in length and was washed ashore in Mangalore in 1874. This species inhabits the Bay of Bengal and the Arabian Sea and belongs to the great group of whales known as the baleen whales or whalebone whales which have no teeth but are characterized by the presence of brush-like structures composed of numerous plates of baleen or whalebone, suspended from the roof of the mouth on either side, enabling the whale to strain the water from the fish, snails and shrimps on which these whales feed. Fully grown specimens of this species attain a much larger size than the one exhibited here and are said to be the largest of animals known, living or extinct.

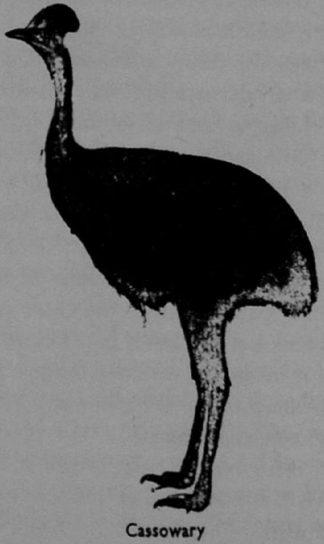
Among the other notable skeletal exhibits in the Museum, the huge skeletons of the Indian elephant and their skulls and tusks of solid ivory deserve special mention. There are two completely articulated and mounted skeletons of the Indian elephant, one in the centre of the mammal gallery and the other in the general skeletal gallery, and two enormous skulls with massive tusks weighing over 50 lb. besides a few sections of the skull which serve to illustrate the comparatively small size of the brain cavity and the presence of a large number of air spaces in the bones of the head which render the skull surprisingly light in proportion to its size. The entire mounted skeleton in the centre of the mammal gallery is that of a full-grown tusker, standing over 10 feet in height at the shoulder and arrests the attention of the visitor by its imposing size. The other complete skeleton in the general gallery is that of a female and is considerably smaller. The extreme shortening of the neck vertebrae, the enormous curved ribs enclosing the roomy thoracic cavity and the massive, pillar-like bones of the limbs are some of the noteworthy features in these skeletons. The preparation of these skeletons and their mounting and installation should have obviously involved tremendous labour on the part of the technicians who had set them up.

Although our Museum is primarily devoted to specimens of South Indian fauna, it can still boast of a small compliment of animals from foreign countries which we have been fortunate enough to acquire. Among these, the Orang-Utan, Tapir, Cassowary and the Kangaroo are perhaps the most outstanding ones. A large male specimen of the remarkable Anthropoid ape, the Orang-Utan, stares grimly at the visitor as he enters the general gallery in which the skeleton of the whale is exhibited. It is seen grasping the branch of a tree as it habitually does and is accompanied by a mounted skeleton of a smaller specimen of the same animal. The Orang-Utan lives in the dense forests of Borneo and Sumatra. The great length of its arms enables the animal to swing rapidly from branch to branch. This ape lives almost exclusively among the branches of trees and constructs a nest on a tree, in which it sleeps at night.

On the other side in the same hall, directly opposite to the Orang-Utan, is exhibited a fine specimen of the Malayan Tapir. Tapirs are found at the present day in South and Central America and in the Malay Peninsula, Java and Sumatra, thus affording an excellent example of discontinuous distribution. They are nocturnal in habit and frequent the most secluded parts of the forest, feeding on vegetation. They take readily to water and can plunge and walk along the bottom of rivers, being capable of remaining under water for appreciably long periods. Young tapirs are beautifully spotted and streaked, but adults have only a plain, broad, white patch across the body. The specimen exhibited is said to have lived in the Madras Zoo before it was acquired and mounted at the Museum.

The Cassowary ranks foremost amongst the small collection of foreign birds in the Madras Museum, and occupies a prominent place in the gallery of birds. It belongs to the group of heavily-built, ostrich-like birds which have lost their power of flight, and is confined to the Australian region where it inhabits densely wooded country especially in the neighbourhood of creeks and streams. It is a shy bird coming out of its shelter in the mornings and evenings in search of food. It feeds chiefly on fallen fruit in the jungle, but in captivity it is more or less omnivorous. It is a swift runner and can leap over considerably high obstacles. The eggs are very large and are incubated mainly by the male. The specimen exhibited in the Museum is said to have lived in the Madras Zoo for some time.

Finally, mention should be made of one of the most recent additions to our collection of foreign animals. It is the skin of a large male Kangaroo which had been very kindly presented to the Museum by Dr. Herbert Hale, Director of the South Australian Museum, Adelaide, in exchange for a small series of skins and skulls of the Indian Pariah dog which he needed for purposes of comparative study, and we take this opportunity to acknowledge our gratitude to him for this valuable gift. The skin of the Kangaroo has now been stuffed and mounted and is waiting to go into the public galleries as soon as arrangements for its casing and installation are completed. The Kangaroo



Cassowary

Kangaroo

is a herbivorous Marsupial, confined to the Australian region, and, as is well known, the female bears a pouch in which the newly-born young are carried about for a considerable period. Their fore-limbs are relatively weak and are used mainly in feeding, but the powerful hind-limbs and thigh muscles enable them to progress with remarkable swiftness by long leaps and bounds. They feed mainly on fruits and vegetables. A small skeleton of a young Kangaroo, and mounted specimens of the duck-billed platypus (*Ornithorhynchus*) and the spiny ant-eater (*Echidna*) which are also confined to Australia are exhibited in the general gallery containing skeletons and integumentary structures of various vertebrate animals.

But apart from the few exhibits of foreign animals we have just surveyed, the bulk of the Museum's collections, both in the galleries and in the reserve cupboards and almirahs, consist of specimens of indigenous animals and a student or a layman gets a fairly complete picture of South Indian fauna by making a study tour round the galleries. It may be of interest to refer now to some of the more notable ones among these exhibits. Among reptiles, the visitor will be particularly impressed by a huge specimen of the luth or the

leathery turtle exhibited in the Reptile gallery in the enormous case containing several specimens of Indian marine turtles. It is the largest of living turtles reaching a length of seven to eight feet and is sometimes known as the trunk-back owing to the presence of strong, longitudinal ridges on the back. It is remarkable in that it is the only species of turtle in which the vertebral column is free from the dorsal shield or carapace. It inhabits the Indian seas, feeding on fishes, molluscs and crustaceans, and comes to the shore to lay its eggs. Its large, strongly flattened, paddle-shaped limbs serve as excellent swimming organs.

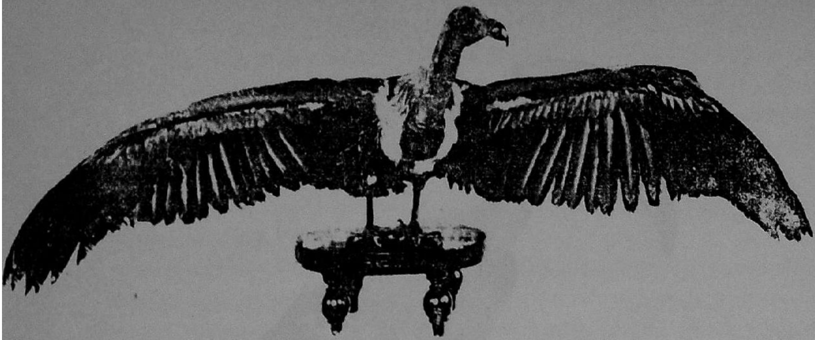
A good representative series of specimens of the Indian species of crocodiles of varying sizes, ranging from very young ones barely a foot long, to giant specimens measuring from about eight to ten feet in length, also constitute quite an interesting part of the exhibited series of reptiles in this gallery. Among these, a moderately young specimen about three feet in length, which had been recently acquired, is mounted with its jaws open and teeth exposed, and its colour being fresh. looks more realistic and life-like than the others in the series. A stuffed specimen of the Indian Python or Rock Snake, which was also acquired only recently from the Trichur Zoo, and attracted large crowds when it was put up as a live exhibit at the entrance to the Museum for some days prior to its ultimate preservation, is another exhibit worth admiring in this gallery as it is the largest of Indian snakes and is capable of capturing and swallowing animals much bigger than itself, by means of its powerful and widely distensible jaws. The specimen exhibited cast its skin in pieces, exposing the brilliant sheen and gorgeous colour of the fresh skin underneath, and greedily swallowed a couple of hens which were offered to it during the brief period of its existence in the cage at the Museum before it was finally killed and preserved. Stuffed specimens of the *Varanus* or Monitor lizard, which is the largest of Indian lizards and the Chameleon with its almost proverbial capacity for changing the colour of its skin to match the surroundings are also noteworthy among our exhibits of South Indian Reptilian fauna.

In the gallery of birds, the visitor can survey an almost complete series of South Indian birds arranged systematically in their natural sequence—a collection that had been gradually built up through several decades of patient and assiduous labour, and stands to-day as a veritable text-book of South Indian Systematic Ornithology. The peacock with the colourful display of its outspread tail feathers, the flamingoes with their long, stilt-like legs displayed as though wading through a salt marsh, the night herons with their nest and young ones which are being fed by the mother with a fish held in its beak, and other fine habitat groups of birds such as the weaver bird, white-breasted waterhen and the kingfisher, which illustrate their respective nesting habits lend colour and charm to this extensive series of feathered creatures.

The Great Indian Hornbill

The Hornbill, a large, heavily-built bird with an enormous, unwieldy beak, found in the forests of Western Ghats and exhibited independently in a case adjoining the one containing the Kingfishers and Hoopoes, will particularly attract the attention of visitors in this gallery. It nests in a hollow which it excavates in the trunk of a tree, and during the nesting season the female is confined to this hollow and is completely enclosed in it by a wall which she builds for herself with her own droppings, using her bill as a trowel, leaving only a narrow slit in the centre through which the male assiduously feeds her throughout the period of incubation.

Among our collection of South Indian mammals, which has recently been enriched by the addition of a fine specimen of the Indian Sloth Bear, mounted in an erect posture on its hind quarters, visitors will be specially interested in the large Carnivores such as the Leopard and the Hyaena, members of the deer tribe such as the Antelope and the spotted deer and in the remarkably fish-like aquatic mammals, the dolphin and the dugong. The Elliot's Dolphin or porpoise is common in the Bay of Bengal and may be seen leaning in



The White-backed Vulture

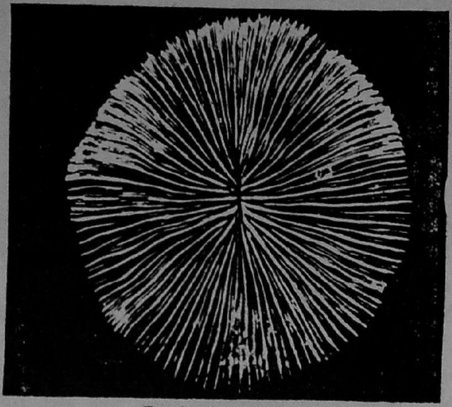
'schools' over the waves occasionally near the sea-coast. Their teeth are conical, regular and set in a uniform series, quite unlike those of the other terrestrial mammals, and are eminently adapted for catching the slippery fishes and molluscs on which they principally feed. The dugong or sea-cow, which is exhibited by the side of the dolphin, belongs to quite a different group of aquatic mammals, and is an inhabitant of coastal waters, drowsing on sea-weeds, and its familiar habit of holding its young against its mammae between its flippers, has probably given rise to the myth of the mermaid. It is valued commercially for its oil which is a fine lubricant for delicate machinery. Finally, the group of monkeys and langurs, with their lean, ludicrous faces and long, rope-like tails, afford an interesting climax to the exhibited series of mammals in this gallery, serving to remind the visitor that he is after all not very distantly related to these humble cousins!

In the spacious gallery of fishes on the first floor, the huge specimen of the Whale-shark (*Rhineodon typicus*), suspended from the ceiling, strikes the eye of the visitor as he enters this Hall from the Invertebrate gallery. The Whale-shark is the largest of existing sharks and is known to attain a length of over fifty feet. The specimen exhibited here is twenty-two feet long and was captured in Madras in 1889. This species has been recorded on several occasions both on the East and the West Coast of India, but the home of the Whale-sharks is among the East Indian Archipelagoes, and they migrate periodically to the Indian coastal waters, their migratory movements depending largely upon the abundance of planktonic organisms on which they mainly feed. The Whale-shark is beautifully ornamented all over with rounded white spots on a deep purplish grey ground colour, and the specimen in the Museum has had to be renovated and re-painted on several occasions in order that it might retain in some measure its original beauty of colour and form. Other piscine denizens of the Indian waters, such as the Rayner's shark, the Sawfish with

its snout elongated into a formidable double-edged saw, the tiger-sharks which are a menace to sea-bathers on the Madras coast, the huge sting Rays with their stinging, whip-like tails, and the Swordfish with its snout prolonged into a sharply pointed 'sword' and a broad, sail-like fin spreading over its back are also exhibited in this Hall of South Indian fishes, impressing the visitor by the imposing grandeur of their unusual size and structural peculiarities.

Besides the outstanding vertebrate exhibits outlined in the foregoing account, this Museum possesses a wealth of material comprising the lowly organized invertebrate animals which reflect vividly many of the intricate curiosities of Nature, particularly the manifold marvels of marine life, and impress on the visitor her superb skill and ingenuity as a supreme artist. The collection of corals, for instance, exhibited in the first room of the Invertebrate gallery, includes a very wide variety of form and structure and contains several fine specimens of various species aptly known as the brain coral, mushroom coral, stag-horn coral, cup coral, tree coral and fan coral in allusion to their particular shape and appearance. The bulk of these corals have been collected from the coral reefs at Pamban, near Rameswaram, and the tremendous effort and labour involved in collecting, preserving, transporting and displaying these exquisite pieces of Nature's own art in the Coral galleries of the Museum as we see them today, will be readily appreciated. A recently prepared diorama in this gallery represents on a small scale the typical appearance of a coral reef exposed at low tide, with its characteristic associated fauna including snails, crabs, star-fishes and sea urchins, and, with the sea painted in its background, ranks high among the more attractive exhibits in this gallery. Corals are the hard, limy skeletal structures of lowly organized marine animals, mostly colonial, allied to the sea anemones and jelly-fishes and reach their maximum exuberance of growth in the tropical seas in moderately shallow water. Their continued and extensive growth result ultimately in the formation of coral reefs and islands which in their turn accommodate a growing and prosperous population of various other types of marine animals.

The Museum is also considerably rich in its collection of shells—anot[illegible] large group displaying an almost endless variety in shape, colour and structure. Among these, the ponderous shell of the Giant Clam, collected from the Laccadives, deserves special mention. It is the largest among the shell-bearing molluscs now living, and is reputed for the enormous muscular strength of the living animal, which might even close in its two massive shell valves on the legs of an unwary diver with such tenacious strength as to result in the victim being subjected to a fatal amputation. Pearl oyster shells showing the actual formation of natural pearls from the mother-of-pearl layer in the shell, and the sinistral shell of the sacred chank with a left-handed aperture, which is greatly



The Mushroom Coral

Diorama of the Starred Tortoise (Testudo elegans)

venerated in India in view of its extreme rarity, also figure foremost among the more valuable specimens of the Museum's collection of shells. Further, a large number of rare and beautiful specimens of shells collected from various localities all over the world by the late Mr. Crichton have been donated to this Museum, enriching our shell collections, and it is with a sense of deep gratitude that we acknowledge this valuable contribution.

At the present day, in almost every advanced country all the world over, Museums have come to acquire a new significance in the scheme of life. From their somewhat unenviable status of being mere show places or repositories for a miscellaneous assemblage of objects some years ago, they are now gradually coming to the forefront and beginning to assume a more dynamic function, particularly as an indispensable instrument in the field of education, both of children and of adults. The Museum of the present day should therefore move with the times and be prepared to shoulder many fresh responsibilities if it has to fulfil the growing demands on its resources as an educational institution. In order to achieve this, the primary need is to modernize our Museum, particularly in the methods of presenting and interpreting our material to the public, so that they may be viewed and understood to the best advantage, and it is with this end in view that we have taken on hand a few schemes which aim at improving the organization and display of the exhibited material in the zoological galleries of this Museum. One of these is to render the display of the exhibits as pleasing and attractive as possible by providing them with suitable backgrounds and introducing a distinctive colour scheme in each gallery, particularly for the interiors of show cases so as to relieve the monotony of an otherwise drab series of specimens, and to make the visitor feel a pleasant change of atmosphere as he passes on from one gallery to another. It has been proved that such an effect tends to reduce Museum fatigue to a considerable extent. Another attempt at improving the display, which we are proposing to undertake is the electrification of the galleries, one by one, commencing with the Reptile gallery which is the most ill-lighted room among the zoological galleries, for no Museum attempting to modern[illegible] its galleries should be without the aid of artificial illumination. Now that shadowless fluorescent lighting is available at a comparatively low cost, it is hoped that ultimately it would be possible to install interior illumination for the individual show cases themselves especially in the Reptile and Bird galleries. Renovation of old specimens, replacements of old and additions of new exhibits, rearrangements and fresh labelling, particularly in the regional languages are of course being carried on as matters of routine, and help to contribute towards the maintenance of the Museum in a state of utmost efficiency and usefulness to the public. Finally, it may be mentioned that one of the important modern trends in the exhibition of natural history material

that we have been able to introduce in our Museum is the preparation of small dioramas or miniature habitat groups of animals, with a painted landscape behind in the background and a foreground containing the animals set in their natural surroundings which are represented by modelled accessories such as grass, vegetation and rockwork. We have been able to make only a beginning in this direction, but it is hoped that very soon we shall be able to build more of these attractive exhibits when more funds and trained technical personnel on the staff are available.

A glimpse into what goes on in the preparation rooms of the zoological section in this Museum may not be out of place before we close this article, as the exhibits which the visitor sees in the galleries are only the finished products of various technical processes which are carried on 'behind the scenes' as it were. Taxidermy is one of these difficult arts involving the careful skinning of the carcases of birds and animals, the preservation of these skins and their final shaping and mounting in life-like form. Such work demands a keen eye for animal form, expert manual dexterity, and a high degree of mechanical ability and very often a knowledge of photography, carpentry, modelling and painting helps considerably in mounting an animal satisfactorily. In modern museums, apart from taxidermy, moulding and casting biological specimens in plaster and wax form an integral part of the preparatory methods,

Setting and mounting insects

as plaster and wax models painted accurately in their natural colours make pleasing Museum exhibits which have a definite advantage over spirit-preserved specimens in that they retain their colour and form almost permanently. Attempts are therefore being made in our Museum to prepare more of these casts, particularly of reptiles and fishes, though the techniques involved in their preparation are difficult and an expert artist is required to paint the finished models in their natural colours. Two cases full of painted casts of some of the more important species of South Indian snakes have thus been prepared and put up in the Reptile gallery during the course of the past year or two. Preparation of enlarged models of small and inconspicuous subjects such as the housefly and the mosquito is also another field of activity in which we are attempting to progress a field in which the Museum technician has an unlimited scope for the free expression of his skill and ingenuity. In addition to all these varied and interesting items of work which tend to make our Museum a hive of constant activity, we have, of course, the primary responsibility of maintaining in trim order the existing collections that have come down to us through the past century, and of handing them down to posterity in a refined, augmented and modernised form as a legacy worthy of the traditions of this great institution.

Preserving a cobra by injection with alcohol

Anthropology

By Sri C. J. JAYADEV, M.A., L.T.

Curator, Anthropological Section

Breeks' Collections from the Nilgiris.—The earliest notable collection of this Museum is that collected by J. W. Breeks and others and catalogued by R. B. Foote, the pioneer pre-historian of India. This includes exotic-looking specimens of tiered pottery, grotesque animal and human figurines (with the buffalo predominant) ornaments of iron, bronze and even gold, cylindrical beads of agate and etched beads of carnelian. The iron implements include razors, sickles, shears, knives, spears and arrowheads. A number of exquisite bronze bowls on stands (pl. I, fig. 2) are also among these antiquities and one of them has designs of lotus flowers and delicate flutings. The view that these antiquities are the handiwork of the ancestors of the present day Todas of the Nilgiris is gaining ground in recent years.

Stone Age and Iron Age antiquities of India collected by Foote.—The next outstanding collection in this Museum was collected by R. B. Foote and acquired for this Museum at a cost of Rs. 40,000. This collection was likewise [illegible] Foote and is unique in being the only pioneer collection [illegible] further [illegible] representative of the Stone Age and Iron Age cultures of India. This collection includes among others the very first palaeolith discovered in India by Foote near Madras in 1863 (pl. I. fig. 1).

Early Iron Age collections. The third important collection in this Museum includes antiquities obtained from two of the earliest of excavations conducted in South India by the Archaeological Survey of India. One of these is the urn burial site at Adichanallur in Tirunelveli district. The finds consist of large pottery urns with which are associated a wide range of grave goods including ornaments of gold, copper, bronze and shell, figurines and utensils of bronze and pottery of a fine polished red and black ware on ring-stands.

The human skeletal material obtained from this site was studied by Elliot Smith and Zuckerman and has thrown considerable light on the racial history of South India.

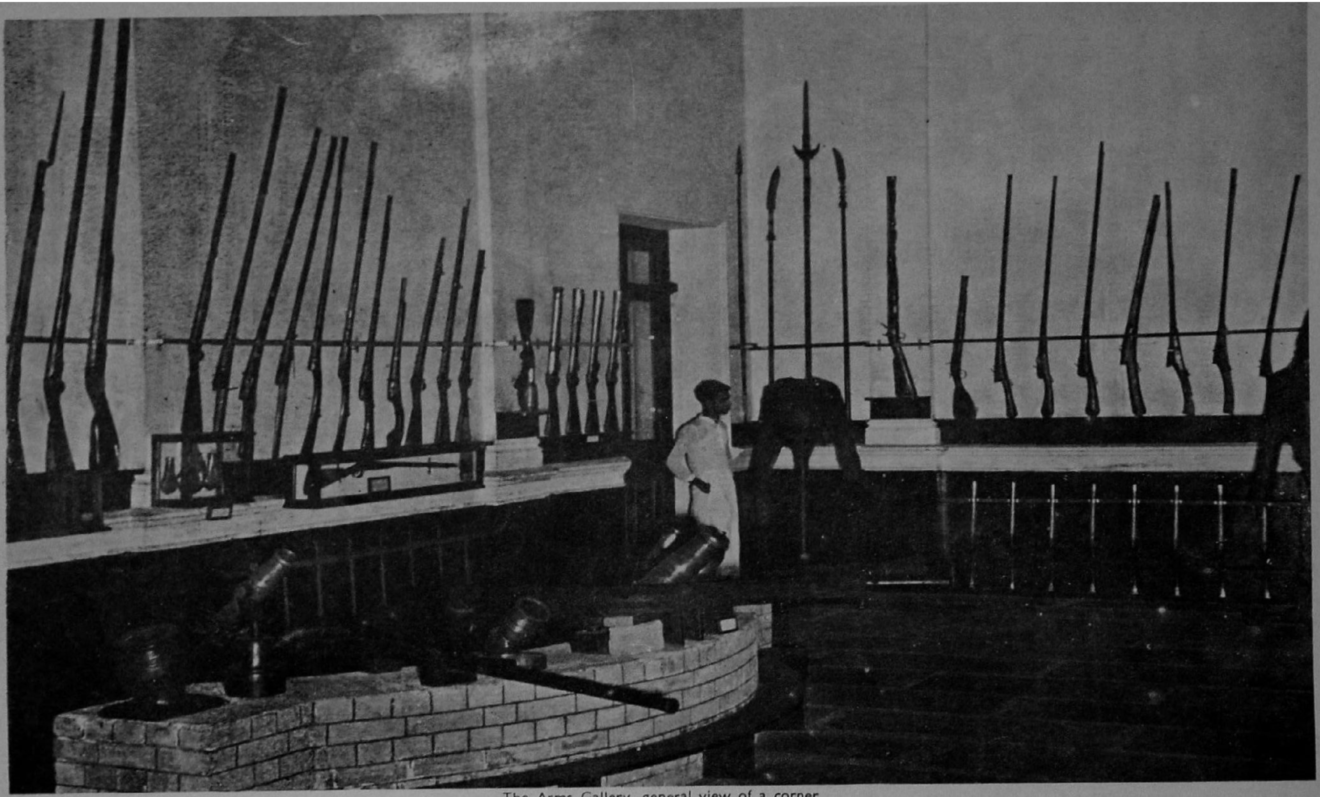
The other site Perumbair in Chingleput district is megalithic and has yielded large pottery sarcophagi of the bath tub variety. They are oblong and rounded and covered over by dome-shaped lids. Each sarcophagus has a series of hollow legs in rows of twos or threes. The pottery associated with these sarcophagi contain calcined bones, iron implements and chank shell ornaments.

Model of a Megalithic cist burial.—A model of a typical megalithic burial with a porthole cist was prepared in this Museum on the basis of recent excavations of megaliths at Brahmagiri in Mysore. This model, the first of its kind prepared in this country, illustrates the typical cist burial surrounded by a stone circle (pl. II, fig. 1) and is exhibited along with illustrations of other types of South Indian megalithic monuments.

Painted pottery from the urn burials of Coimbatore.—Some of the most elegant and artistic forms of pottery so far obtained or made in South India both from the point of view of decoration as well as finish are those associated with the urn burials of Coimbatore collected and presented to this Museum in greater part by Stokes, Clegg and Biddulph. The pottery types are remarkable in forming a unique series. Their decorations in the form of wavy lines, their high polish and the excellent state of their preservation indicate the high standard of the potter's craft in South India.

The Sankavaram Sarcophagus.—From excavations conducted by this Museum have come down to us a varied collection of antiquities augmenting our collections. Among these are the palaeoliths of the Madras facies, the four-footed urns from the rock-cut tombs of Malabar and the zoomorphic sarcophagus (pl. II, fig. 2) from Sankavaram in Cuddapah. This sarcophagus resembles a ram in shape.

Index collections of Stone tools from various parts of the world.—The stone age collections from peninsular India made by Foote have been considerably augmented by other collections. Among them is the share of this Museum of the collections of the Yale-Cambridge expedition of De Terra and Paterson to the Soan valley in the Punjab, the Manley collection from Nellore and a fairly large series of foreign stone tools got by exchange for study purposes. Among the latter are the rostrocarinates of Reid Moir from England, Mousterian and Magdalenian tools from France, neoliths from Egypt, Palaeoliths from South Africa, stone tools representative of the Choukoutienian of China, the Patjitanian of Indonesia and the Tampanian of Malaya, and a large series of stone tools representative of the pre-history of the United States of America, obtained from the Peabody Museum, Harvard.



The Arms Gallery, general view of a corner

Arms and weapons of the historic period.—Among the large collections of arms and weapons in this Museum, the following are of special interest. Around the front building which forms the Museum theatre are arranged a number of cannon captured at Manila, Mysore and Tranquebar. (Two large bronze bells obtained as trophies from China during the notorious opium war are on view at the entrance to the arms galleries.) There is a large series of match locks, musketoons, blunderbusses and handguns mostly used by the East India Company or captured by them as trophies of war. Two guns richly inlaid with gold are specially exhibited in separate cases. These guns were presented by the East India Company to Sarfoji Maharaja of Tanjore.

A large collection of exquisitely carved gauntlets, daggers, elephant goads and swords from the Tanjore armoury are also noteworthy exhibits which illustrate the remarkable skill of the craftsmen in carving out of steel and other metals such fine forms as *yalis*, *makaras* and parrots. Two old cannon, one of which is a recent accession from a treasure-trove find in Malabar, represent the earliest method of cannon manufacture. Longitudinal strips of iron are arranged inside a series of circular iron loops or rings and the whole is welded together instead of casting the entire cannon as a single piece in a mould. The cannon from Malabar is believed to be of Portuguese origin and is in an excellent state of preservation. Examples of mail armour from Tanjore, Spanish plate armour and helmets from Manila, Chinese helmets, carved powder flasks, halberds, pikes and spears also form part of the collection. A very early type of breech-loading cannon used by the East India Company and a series of miniature models of cannon and mortars are also among these exhibits.

Ethnographic collections.—The ethnographic collections of this Museum were first acquired by Dr. Edgar Thurston when he conducted an ethnographic survey of this State half a century ago. These collections have been considerably augmented and are now highly representative of the material culture of most of the South Indian tribes such as Todas, Kotas, Mannans, Muthuvans, Kanikar, Chenchus, Lambadis, Savaras, Khonds and Gadabas. The tribal collections include hut models, wearing apparel, implements of hunting and agriculture, jewellery, devices for making fire, musical instruments and cult objects. Other collections include writing materials, musical instruments, votive offerings and figures used in sorcery, shadow play and the Kathakali dance-drama.

Jewellery.—The jewellery collections of this Museum, both rural and tribal, exhibit a variety of design and materials. The highly decorative ornaments of the Nambudiri Brahmans and the Syrian Christians have much in common between them. The ornaments of the Kotas are made of iron while the massive

ornaments of the Todas and Badagas are made of brass. Coloured glass beads, wood, fibre, coconut shells and bamboo are some of the materials which are used in making tribal jewellery. Thus the Kadar have ear discs of wood and pandanus leaves and make decorated bamboo combs. The highly bejewelled Lambadis have several anklets, armlets, bracelets and necklaces made of brass or ivory. Though tribal jewellery consists at best of cheap trinkets, it is important in giving the tribesmen scope and outlet for the expression of their artistic talents and workmanship. On the other hand, rural and even urban peoples wear jewels of gold, silver and precious stones in which they invest their savings. The peasant jewellery collections of this Museum vary in their designs, styles and even materials according to the castes concerned or the regions in which they live.

Wearing apparel.—A life-size model of a Lambadi woman shows the highly ornamental dress and jewellery worn by this tribe. The dress is fringed with cowry shells and brass beads while glass pieces inlaid in the dress enhance its attractiveness. Other types of tribal apparel are also included in the collections of this Museum. Among such are the sedge apron of the Thanda Pulaya women of Travancore, the leaf aprons and bark aprons of the Khonds of Ganjam, the beautiful bark fibre cloth with red and blue bands of the Gadabas of Jeypore and the fine embroidered mantles or Putkuli of the Todas of the Nilgiris.

Tribal weapons.—While some of the food gathering and collecting tribes like the Kadar and the Travancore tribes use only pellet bows and digging sticks, most of the South Indian tribes use bows and arrows in hunting. The Kallar and Maravar of South India were experts in the use of the boomerang. The South Indian boomerang is made of wood, iron or ivory, is knobbed at one end and belongs to the returning type used in hunting. An exchange of boomerang is an important ritual in Kallar marriages. The Kallar have a proverb "send the boomerang and bring the bride." Australian boomerangs of both the returning and the non-returning types have been added recently to our collections. The blowgun is also used in Malabar and Madura for hunting and fishing. It is similar to those used by some of the Kenya Keddah tribes of Borneo. It is a long tube through which poisoned darts are propelled by lung power. Another interesting tribal weapon is the cross-bow of the Ulladans of Travancore. Horn knuckle dusters used by the Jettis of Mysore, a caste of professional wrestlers in their wrestling bouts, are also exhibited in this series.

Fire-making implements.—The making of fire by friction is a characteristic tribal feature and the devices used in this process form an instructive exhibit. The fire drill, the fire saw, the flint and steel and the fire piston are some of the devices exhibited. The fire drill is of two kinds. One of them, the simpler

variety used by such tribes as the Nayadis and the Yanadis, works by the twirling method. There are two long slender pieces of wood one of which has a series of cylindrical depressions scooped out in it and into one of which the other fits. It is held vertically and while the first piece is held horizontally in between the operators' feet, the other vertical piece is twirled by using both the palms. In the other type of drill which is used by Badagas, the vertical stick is stout and ribbed like a carpenter's drill and is worked by churning with a rope. Its lower end is inserted into one of the depressions of the other horizontal piece on the ground which is equally stout. The latter is held with the feet by one of the operators who also holds the vertical piece firmly in position by a cup made out of a coconut shell while the other person churns with his two hands. Some fine vegetable floss is used as tinder and this is kept in a hollowed out palm shell. The flint and steel strike-a-light is also met with among several tribes. The fire piston in which fire is produced by the vigorous compression of air is used by some of the Malayan tribes.

Writing materials.--In many parts of South India, writing materials consist of steel styles and palm leaf cadjans. The large collection of steel styles in this Museum includes many artistic forms and in some of them the style and knife are combined into one piece. What are believed to be writing styles have also been unearthed in early iron age burials in South India. Besides palm leaves, other materials are also used for writing on. Some documents written on bamboo constitute a unique exhibit. Bark paper, reed pens and linen account books are also exhibited in this series. The linen is blackened with charcoal paste and written on with soapstone pencils.

Musical instruments.—Among the varied and representative collection of South Indian musical instruments in this Museum, the Burmese Harp and the Pancha Mukha Vadyam are rare and unique exhibits.

The Burmese Harp is a stringed musical instrument which has an artistic boat-shaped resonator. It is said to be the only extant form of the *yal* of ancient Tamil literature.

The Pancha Mukha Vadyam (pl. III, fig. 2) is a huge bronze drum used in temple music. It has five faces which are named after the faces of Siva. The instrument is played with both the hands to the accompaniment of other musical instruments.

Votive offerings.—A large pair of leather sandals made and offered by the Madigas or Telugu cobblers to the God Sri Venkatesa of Tirupati is prominent among the votive offerings which are mostly silver pieces offered to gods and goddesses at important Christian, Hindu and Muslim shrines in India and abroad.

Meriah Sacrifice Post

Moplah sorcery figures.—The moplah sorcerers are said to excel all others in magico-religious practices such as casting out evil spirits. Three impressive exhibits illustrate such beliefs and practices. When a woman is possessed by an evil spirit, the sorcerer transfers the spirit to an image of wood by incantations. The spirit is then secured to the wooden image by driving nails into it. It is then cast into the sea. Such figures have been washed ashore on the coast of Malabar, of which three are exhibited. One of them is inscribed on a plank ; of the other two in the round, one is a large life-size female figure (pl. III, fig. 1).

Kathakali Dancers —Life-size models

Kathakali Figures.

Kathakali is the well-known dance-drama of the Malabar coast, in which gesture language is used more effectively than words, and character is delineated by masterly make-up. Derived most probably from folk dances, Kathakali has been perfected during medieval times by its royal patrons and has much in common with classical Bharatanatyam.

These models of the four character types of dancers, carved exquisitively in wood and painted with the closest attention to details, were made in Travancore for us and got in exchange for a few of our bronzes.

Khond Sacrifice Post.—A huge wooden post obtained from Balliguda in Ganjam is exhibited at the entrance to the pre-historic antiquities galleries. It is associated with the human sacrifices made by the Khonds of Ganjam in honour of their Earth Goddess called Tara Pennu. The victim called a Meriah was purchased or captured. He was fed and clothed well till the day of the sacrifice. He was anointed with oil and turmeric, tied to the cross piece representing an elephant which was whirled around the upright post and men and women sang and danced around him. He was then battered to death and hacked to pieces. Everyone took a piece of his flesh and buried it in his field to ensure good crops and avert evil. When the practice was prohibited, the Khonds took to buffalo sacrifices. The cult objects of this tribe are a fine series of brass images of animals which are worshipped and carried before marriage processions. The tribe is also interesting on account of the bison dance like the Koyas and Savaras.

Kathakali figures.—The celebrated dance-drama of Kerala is illustrated by the four principal character types which portray the leading roles. The first of these *Pacha* (green) is the character role of the great epic heroes like Dharmaputra and Arjuna who conform to the Apollonian way of life. The second *Kathi* (sword) is the more imperial and royal character who is egocentric and megalomaniac in nature as exemplified by Ravana or Duryodhana. The third *Tadi* (beard) is the terrific demoniac role of the classical villain of the drama like Bakasura and Dussasana. The fourth character *Stri* (woman) simply represents one of the royal ladies such as Damayanti, Draupadi or Rukmani whose character roles are almost quite uniform so as to conform to a single type. These figures depict the actual costumes and make up of the principal characters of the dramatic art of Kerala.

Pavai Koothu or Shadow-Play figures.—The principal dramatic entertainment of this country before the advent of the cinema and the talkie is the shadow-play drama comparable to the Punch and Judy shows. This is the Pavai Koothu of Malabar which has wide ramifications. Leather figures cut out in silhouette are used and depict scenes and characters from the epics l" the Ramayana. The limbs of the figures are movable and are manipulated by strings or splints. The figures are illuminated from behind the screen on which the performance takes place. The dramatic effect is heightened by a sort of running commentary or dialogue kept up from behind the screen. Similar figures also obtain in Cuddapah in which besides human characters animal figures predominate. The Wayang Orang of Java which is also exhibited though grotesque and exotic is said to show influences of the South Indian art.

Our Numismatic Collections

By Sri P. N. MOHANDAS, M.A.

Curator, Numismatics Section

NUMISMATICS IS THE study of coins. Its importance to the study of history is great. It is an important source of ancient history. It not merely confirms history, but sometimes even modifies or amplifies it. To some extent the political and economic history of a country is constructed by the study of coins and historical facts are very often corroborated or rejected on numismatic findings.

Numismatics is an important source of the political history of ancient India. Our knowledge of the Indo-Bactrian Greeks, Indo-Scythian, Indo-Parthian, Kushana and Western Kshatrapa kings is based on their coins.

The Madras Museum has a very rich collection of the ancient, medieval and modern Indian coins, gold, silver, copper, lead, potin and billon. *Besides these there is a representative collection of foreign coinage.*

The earliest Indian coin represented in the Museum Cabinet is the *Parana* or the Punch-marked coin (pl. III, fig. 4), as it is called in English. The term punch-marked, is used to distinguish it from the "die-struck" coin. A die covers the whole or a very large part of the face of a coin, but a punch covers only a small portion of its surface. These punch-marked coins have been classified as Pre-Mauryan, Mauryan and Post-Mauryan. The silver punch-marked coins generally weigh 56 grains.

There is a rarer type of these coins, called the "Satamana", a long bent bar of silver weighing 560 grains. The date of the "Satamana" has been fixed approximately at 600 B.C., because Panini, whose date has been conservatively put as 600 B.C., has mentioned these coins in his works.

The following are some of the important of the ancient Northern Indian dynasties represented in our collections—Indo-Bactrian Greeks, Indo Parthians, Kushanas, Western Kshatrapas, White Huns, the Vardhanas of Thaneswar and the Guptas.

The Gupta coins are worthy of special mention. The epoch of the Guptas marks a period of great Hindu revival. The Gupta coins are mostly of gold, but the Guptas also issued silver and copper coins. The inscriptions on the

coins are all in classical Sanskrit which for the first time appears on Indian Coinage. On the obverse of the coins we find the king praying before the altar, playing on the Veena, performing Asvamedha, riding on the horse, slaying the lion or the tiger, or sitting on a couch. On the reverse is found either the queen, or the goddess Lakshmi seated on a throne or on a lotus seat.

Roman Imperial coins are found in India, largely on the west coast of Southern India. The discovery of these coins on the coastal towns of Southern India is another proof of the existence of sea-borne trade between Ancient Rome and Ancient India. A year back a hoard of Roman gold coins was found in the Amindivis, a group of islands off the South Canara coast. Some coins of this hoard were found in perfect mint condition.

Most of the Rajput dynasties of the medieval period are represented in our coin cabinet. In almost all these coins we find, on the obverse, the king riding on the horse, and on the reverse a recumbent bull. The representation of the horse shows the importance the Rajputs gave to horses.

The early Muslim coinage is very richly represented in our collections, Mohammad Sam Ghor, Balban of the Slave dynasty, Alauddin Mohammad Shah of the Khiljis, Muhammad-bin-Tughlak and Ferozshah Tughlak and Sher Shah of the Sur dynasty,—these are some of the important kings whose coins—gold, silver and copper—are represented in our collections. On these Muslim coins, in general, we find the name of the Sultan, his titles, his regnal year, the Hijri year and the mint place. The characters are all in Persian script.

Coming to South Indian coins, we have the coins of the Cheras, the Pandyas, the Cholas, the Western and the Eastern Chalukyas, the Rashtrakutas, the Kakatiyas, the Yadavas, the Hoysalas, and of more recent times, of Vijayanagar and Mysore kings.

South Indian coins are usually identified by studying the figures, emblems, legends and dates on them. The Chalukyas had the insignia of the boar, the peacock fan, the ankusha, the golden sceptre, the banner of the sharp sword and drum. The Yadavas of Deogiri had the golden Garuda as the emblem. The Hoysala Ballalas who ruled over Mysore had the figure of a tiger on their coins. The cognizance of the Cheras was the bow ; of the Pandyas, the figure of a fish in various combinations. The Chola coins bear the tiger in the centre, with the Pandya and Chera emblems (fish and bow) on either side of it. The coins of Raja Raja I have, however, the figure of the King standing, on the obverse, and that of the King sitting, on the reverse.

The "varaha" or the figure of the boar incarnation of Vishnu, with a sword, was the chief emblem of the Vijayanagar coins. But the bull, garuda, and the elephant also appear on their coins at various times. The Hindu kings of Mysore had the figures of Shiva and Parvati on their gold coins and

that of the elephant on their copper coins. Haidar Ali continued the figures of Siva and Parvati on some of his gold coins and Tipu inscribed the figure of the elephant on all his copper Paisas.

In Northern India, the basis of the system of weights was the *Rati* (*Abrus precatorius*) seed, which was approximately equivalent to 1·75 grains. In Southern India, the monetary system was based on the weights of two kinds of seeds of indigenous origin, namely, the *manjadi* (*Adenanthera pavonina*) weighing about 5 grains, and the *Kalanja* or Molucca bean (*Caesalpinia bonduc*) weighing 10 manjadis or 50 grains.

The gold fanam, the unit of South Indian currency, is equivalent to the manjadi seed. The gold varaha or Pagoda, the other South Indian denomination is equivalent to the Kalanja seed.

A very rare find was recently acquired by us from Dowlaishwaram, a place very near Rajahmundry. This find consists of 127 gold coins, 49 of which belong to the Eastern Chalukyan ruler, Raja Raja I, and the rest to his son, Kulothunga Chola (pl. III, figs. 3, 5). The coins of Raja Raja Chalukya show the usual Chalukyan symbols and the legend, "Sri Raja Raja Sa." The coins of Kulothunga Chola are of some importance. There are two types—the "Malanadu konda Chola" and the "Kadai konda Chola" types. Both these types have the same figure and emblems, but the legend varies. The meaning of the first legend is obvious, namely, "the Chola, the Conqueror of Malnad." The second legend, "Kadai konda Chola," means the Chola, the conqueror of "Kadai", and this "Kadai" has been taken by scholars to mean "Khedda" in Malaya and thus they adduce additional proof for their claim that Kulothunga conquered Malaya and these coins, they say, were minted by him in commemoration of his conquest.

We have a very good collection of Mughal gold, silver and copper coins. As is usual with all Muslim coins, they bear the titles of the emperor, his regnal and the Hijri year, and the name of the mint place. Jahangir's coins are the only exception. He inscribed the figures of the 12 zodiacal signs on the obverse of some of his coins.

Coming to the 17th, 18th and early 19th centuries, we have the coins of the Portuguese, Dutch, French and Danish Settlements, and of the English East India Company. The Pre-Rupee types of the English East India Company Coinage are the old star Pagoda, the single swami Pagoda, the three swami Pagoda, the Mohur and the Five Rupee coin (all gold) and the Five Fanam, the Two Fanam, and the Star Pagoda (silver). Besides these we have the Rupee coins issued by the Company in the name of their Mughal overlords, Alamgir II and Shah Alam II.

Under the Treasure-Trove Act all finds unearthed anywhere in the State are sent to this Museum by the Revenue authorities for our examination

and if we decide that they are worth acquiring, they are acquired by the Government for the Museum.

The treasure-trove hoard is not the only source of our collections. We have coins here that have been distributed to us by other Museums, coins presented to us by private individuals and those purchased by us from private collectors or other Museums.

Besides being in charge of and doing research work on these coins, the Curator also helps other institutions and individuals to identify, classify and arrange their collections. Many schools in the City of Madras often come to this section for such help.

The Numismatic section has started a small gallery of its own, where plaster cast impressions of coins have been exhibited for the benefit of the ordinary visitors. But our collections will be shown to any bona fide student of coins, or to small groups of students of schools and colleges, if they apply to the Superintendent. Plaster cast impressions and photographs of coins are also offered for sale to the public.

The section has again begun the sale of duplicate coins. Lists of coins which are offered for sale are printed from time to time.

The Chemical Laboratory in the Madras Government Museum

By Dr. S. PARAMASIVAN, M.A., D.Sc.

Archaeological Chemist in India, Dehra Dun

DR. F. H. GRAVELY, who was Superintendent of the Madras Government Museum from 1920 to 1940, was responsible to a great extent for building up the research activities of the great institution, and giving it a place among the great Museums of the world. The Chemical Laboratory in the Museum owes its inception to his scientific vision and forethought.

It is well within the knowledge of scholars that the Madras Government Museum has the richest collection of world famous South Indian bronzes of great value. These bronze collections have already impressed distinguished scholars from all parts of the world.

Bronzes are always subject to a process of corrosion. The process is intensified by the saline atmosphere caused by the nearness of the sea, as at Madras. Most of the bronzes in the Madras Museum are treasure-trove finds. They had been lying buried under the earth for centuries. Through contamination with soil and mineralized waters, they became seriously corroded. A thick crust of basic carbonate and basic chloride was formed on the surface hiding all the decorative details and inscriptions. At times, there were also bluish green specks, which attacked the bronze and enlarged and caused corrosion in an epidemic

Dr. S. Paramasivan

These processes have been going on continuously for years. The bronzes have been removed in this condition to the Museum. It is, therefore, necessary to eliminate the corrosive crusts, so as to expose the details underneath. Occasionally, however, one comes across a crust, which is uniform in character, and of pleasing enamel-like appearance. This crust, which is

called, "patina," is quite compact and protects the bronze from further disintegration and the details are still visible through it.

With the valuable collections, as at the Madras Government Museum, it was felt necessary to treat the bronzes disfigured by corrosive crusts in order to expose the decorative details and to eliminate the bronze disease, which brings in added deterioration. As early as 1923, these facts were realized by the then Superintendent of the Museum, Dr. F. H. Gravely, who, for the first time, moved the Madras Government for the appointment of an Archaeological Chemist to undertake this task. As an experimental measure, Mr. Ram Singh Ahuja, who had been a Government of India scholar working under the Archaeological Chemist in India, Dehra Dun, was appointed to the post, for six months. At the end of this period, the results of his experiments were communicated to the Government of Madras, who referred them to Prof. Erlam Smith, then Professor of Chemistry in the Presidency College, Madras.

It is well known that corrosion is an electro-chemical process, and a reversal of this process will restore the corroded object back to its original state. This principle had been suggested by Prof. Colin G. Fink, an eminent electro-chemist, for the restoration of bronzes in the Metropolitan Museum of Art of New York. The method has been applied with considerable success in important American Museums such as the Metropolitan Museum, Field Museum of Natural History, Chicago, and by some of the American Excavation units working in Greece. Prof. Smith felt that the same method must be employed with modification for the restoration of bronzes in the Madras Government Museum. The suggestion was accepted by the Madras Government and an Archaeological Chemist was specially appointed and exclusively set on this task, under the guidance of Prof. Smith. The present writer was appointed to the post in 1930. The work of electrolytic restoration has been going on since then.

With regard to the electrolytic treatment, the American Museums had to deal with bronzes of about 12 to 18 inches, while the bronzes in the Madras Government Museum are about 4½ feet in height. The former is analogous to a laboratory scale of work and the latter to the industrial scale, which demands a technique of its own. The difference may be realized better from the fact that the maximum power output in American Museums is about 100 watts, while in Madras it is about 7,000 watts.

The machinery for the electrolytic reduction was specially designed by the Metropolitan Vickers and consisted of a 12 h.p. motor generator set capable of giving an output of 7 K.W. There are three parallel circuits, with ranges 0–60, 0–20 and 0–5 amps. so that three lots of bronzes can be treated simultaneously. The output can be adjusted to get any desired voltage. In

this process, a cast iron vat, insulated from the ground, acts as the electrolytic cell as well as the anode and the bronze insulated from the cell, acts as the cathode. A two per cent aqueous solution of caustic soda serves as electrolyte.

The excellence of the method can be gauged from the following facts. Bronzes which had been covered over with such a heavy crust that they appeared shapeless and unrecognizable, were restored to their original form, and many interesting details have been laid bare after removal of the crust. This also ensures the long life of the bronze. These facts will become clear from the Museum albums of photographs of bronzes before and after cleaning. In 1932, Sir Richard Gregory, F.R.S., Editor of *Nature*, visited the laboratory and was greatly impressed with the work. In a press interview which he gave on 'Scientific work in India,' he made a special mention of the electrolytic process employed in the Madras Museum.

The electrolytic process has been extended to coins and iron antiquities.

In 1935, the Museums Commission headed by Mr. S. F. Markham and Mr. H. Hargreaves, visited the Madras Government Museum. They were greatly interested in the work done in the chemical laboratory and suggested that all the exhibits in the Museum, and not merely the bronzes, must be included within the chemist's purview. Thus the activities of the archaeological chemist were widened. The laboratory was at first located in a temporary three-roomed structure, which had been intended for a restaurant. With increased activity, additional laboratory accommodation was found necessary. In 1937, a separate laboratory was built, being the only one of its kind in India. Simultaneously, all the exhibits in the Museum in the archaeological, anthropological, and pre-historic sections came up for treatment. Such widely differing materials as gold, silver, bronze, lead, iron, stone, including lime-stone and marble, textiles, leather and the like came up to the chemical laboratory for chemical treatment and preservation.

The Madras Museum is one of the few institutions in India where the quarterly examination of the condition of the exhibits, is being conducted by the chemist and the curators of the sections concerned. This acts as a check on the deterioration of the exhibits.

The Madras Museum was also of help to the Archaeological Survey of India. In 1935, Mr. J. F. Blakiston, who was then Director-General of Archaeology in India, requested Dr. Gravely to spare the services of the Museum Chemist to examine and report on the condition of the Ajanta-like paintings in the Brihadisvara temple at Tanjore, and to preserve the paintings at Sittannavasal in the Pudukkottai State. Dr. Gravely was quick to realize the paucity of experts in this country to deal with the problems of preservation of our rich cultural heritages in the form of ancient paintings. He was also

impressed with the urgency in the matter of treatment of paintings. Though the subject did not come within the purview of the Museum, he realized the peculiar circumstances and co-operated fully with the efforts of Mr. J. F. Blakiston.

This was the starting point for a general scientific survey of wall paintings, which were disintegrating in many parts of India. This laboratory was the first to conduct a scientific survey and publish the results in leading scientific journals such as *Nature, Technical Studies, Proceedings of the Indian Academy of Sciences, Journal of the University of Madras, Current Science, Journal of the Indian Society of Oriental Art*, etc. In 1943, and at the request of the Archaeological Survey of India, another fresh survey of the condition of some of the important wall paintings was made by the Museum Chemist under orders of the Government of Madras.

It may be of interest to know that the preliminary work done in the Madras Museum as early as 1935, was the basis for the systematic treatment of Tanjore paintings, which was undertaken by the Department of Archaeology in 1946.

Paintings were not the only subjects which were tackled here. There are many metallic antiquities, whose exact methods of fabrication have to be worked out experimentally to reconstruct the technical skill and technical achievements of the ancients in the field of metallurgy. A beginning was made in this direction in the Madras Government Museum, supplemented by the facilities available at the Chemical and Metallurgical Laboratories of the M. & S. M. Railway, Madras.

The laboratory has given training in methods of preservation to Museum workers from Pudukkottai, Hyderabad, Nagpur, Baroda, etc.

Archaeology and Art

By Sri P. R. SRINIVASAN, M.A.
Curator, Archaeological Section

INTRODUCTION.—The Archaeological Section of the Museum is primarily concerned with the acquisition, preservation and display of antiquities, except coins, of the historic periods of South India. The antiquities consist of sculptures, architectural pieces and metal and stone inscriptions which have a bearing on the past history and social life of the people of this part of India. A significant collection of objects representing the industrial arts such as wood carving, ivory work, metalware and inlay and embossed works for which South India has been famous from very early times, is also dealt with by the Section. A small but valuable collection of paintings, comprising those in the Tanjore style and a few others by modern artists, also forms part of the collections. These paintings are the nucleus of the proposed National Art Gallery of Madras.

The objects mentioned above have been slowly accumulated and preserved in the Museum since its inception. They were organized into the present form about 1938 due to the efforts of Dr. F. H. Gravely. Though prior to the formation of the Section sporadic notices on certain groups of antiquities have revealed the importance of the objects and thus made the Museum well known, yet only after the formation of the Section more detailed studies of the antiquities of the Museum were undertaken, and the results of the studies published in a series of Museum Bulletins. Gradually, the scope of research work of the Section, initiated by Dr. Gravely, was expanded so as to include other allied subjects such as temple architecture. The activities of the Section, thus, increased and as a consequence, it grew rapidly in size.

Collections.—The collections of the Section may be grouped as follows, each group being important and interesting in its own way: (1) Bronze figures, (2) specimens of sculpture and architectural pieces, (3) paintings, (4) inscriptions and (5) industrial art objects. The study of the objects of the

first three groups is essential for a proper evaluation of the levels of culture, reached by the people of the different periods and localities to which they belong. The inscriptions are, however, the main source for the history of the country as also for its social life. The study of the specimens of the industrial arts reveals how dexterous the South Indian craftsmen were in their application of various art motifs to objects used in daily life or on ceremonial occasions.

Bronze figures.—By far the best known objects of the Section are the metal figures. There are over 800 of them in the Museum, of which about 85 are Buddhist, about a dozen Jain and the rest Hindu. This Museum is perhaps the only institution in the whole world, where such a large collection of metal figures is assembled under a single roof. It may be well to remember here that there are countless figures of this kind in the innumerable temples of South India. This bewildering quantity will itself suffice to show the extent to which the art of casting images or figures in metal had been practised in this part of India in the past—unprecedented in the history of any other country in the world. As several of them are so wonderfully wrought and are in accordance with the accepted canons of aesthetics, they are amongst the world's best treasures of art.

The collection of bronze figures contains specimens of different periods ranging from the early centuries of the Christian era to the recent times. The four fragmentary Buddha figures (pl. V, fig. 1) excavated at Amaravati in the Guntur district, are the earliest and date from about the third century A.D. The style and features of these figures presuppose a considerable familiarity with the art on the part of the people who made them. The other Buddhist metal images come from Nagapattinam, and they vary in date. Of these, the seated Buddha and the small figure of *Simhanada* in the graceful *maharajalila* pose are important. A mutilated figure of Lokesvara (pl. V, fig. 2) from near Sirkali (Shiyali) is also of interest as it is in the late Pallava style. A monograph on the entire collection of Buddhist metal images is under preparation.

Of the Jain metal images, the recently acquired figure of a Tirthankara from near Madurai is noteworthy. This is the largest Jaina metal figure so far acquired for the Museum, and, as its features suggest that it might belong to the early Pandyan period, it may also be one of the earliest metal images to be acquired from the ancient Pandyan territory. This figure is unmistakable evidence for the existence of Jainism in the Pandyan Kingdom about the tenth century A.D. The other images, which are comparatively small, in size, all come from the Telugu country and they are of the usual type.

The most important part of the collection of bronze figures is that representing Hindu gods, goddesses and devotees. The images collected up to

1932 have already been published in the form of a catalogue in which they are treated under two major heads, namely, Vaishnavite and Saivite. Accordingly the images of each group are shown in separate rooms on the first floor of the front building behind the Museum Theatre. Of these images, only a few date from the Pallava period, a slightly larger number from the Chola period and the rest belong to the Vijayanagar and later periods. The Pallava specimens include the figures of Somaskanda (skanda missing), Vishapaharana, Kannappanayanar and Vishnu (Catalogue No. 1). The best Chola specimens are the figures of Natesa from Tiruvelangadu and Velanganni, the Rama group, Vishnu as Srinivasa (Catalogue No. 1), Tirumangai Alvar and the inscribed Kali. In fact, some of them, for instance, the Tiruvelangadu Natesa and Rama of the Rama group, are so well executed as to be real gems of art of which we can be proud. The figures representing Vishnu with two hands from Komal, and Balasubrahmanya and dancing Balakrishna belonging to later periods are also of interest as they are essentially in the traditional style though just beginning to get conventionalized. And the figures of Venugopala, Rukmini and Satyabhama from Chimakurti which represent the art of the Telugu country have remarkable grace about them.

The additions to the collection of bronzes after the publication of the catalogue are also considerable. They include some rare and beautiful specimens. Of the six Natesa figures acquired since 1932, two are of exceptional merit. The Natesa from Kuram in the Chingleput district acquired for the Museum through exchange is important as it is a genuine example in the late Pallava style ; and also as this is one of the rare images in the pose called the *urddhvajanu*. The second figure of Natesa (pl. V, fig. 3) is from a village near Madurai. It is interesting historically, iconographically and artistically. It is the largest metal image to be acquired from the Madurai district [illegible] it might belong to the early Pandyan period. More interesting is its pose called in Tamil *marukal tandavam*, i.e., dancing with leg reversed. In this image Siva dances with the right leg raised instead of the usual way of dancing with the left leg raised. This peculiarity of the figure is in keeping with the tradition that at Madurai Siva dances in this reversed pose while the common type is characteristic of Chidambaram. That this distinction was in vogue at such an early period as the one to which this figure may be attributed is a matter of interest. Of the remaining images, the figures of Adhikaranandi and his consort are interesting from the point of iconography, as this is the first group of its kind to be acquired for the Museum. They are also important as they are the largest metal figures to be got from the Ramanathapuram district. The images representing sage Vamana and the *ayudhapurushas*, Sudarsana and Kaumodaki, are other interesting items of the later addition.

Sculptures.—The next best known collection of the Section is that of stone sculptures. They fall into two groups, namely, the early Buddhist, Jaina and Brahminical sculptures and the sculptures of the medieval and later periods. The date of the former ranges from about 200 B.C. to about 350 A.D., and that of the latter from about 600 A.D. to recent times.

Early Buddhist sculptures.—The collection of early Buddhist sculptures includes the large group of sculptures from a ruined stupa at Amaravati, a few fragments of sculpture from Jaggayyapeta, a few sculptured friezes belonging to a stupa at Goli. The total number of these sculptures is about 300. Of these, the sculptures from Amaravati and Goli have been studied in detail and published. The Amaravati sculptures are of interest as they are in at least four distinctive styles showing the development of the art in South India. These styles are more or less akin to the contemporary styles of sculpture of North India, such as the Maurya, Sunga and Kushana, which establishes the fact of the unity of culture of India from very early times. The most interesting feature of the sculptures from Amaravati is the wealth of details they furnish in regard to the various aspects of social life of those periods. For instance, furniture, costumes, postures, vehicles, etc., shown as in the frieze (pl. VI, fig. 1) depicting the scenes from the life of the Buddha are true to nature and cannot possibly be improved upon.

The Goli sculptures, belonging to a period later than that to which the sculptures of the last phase of the Amaravati stupa belong, show the later development of Andhra art.

The Jaggayyapeta sculptures belong to about 200 B.C. The archaic features and the very low relief work are characteristic of the art of the period. The figure representing Cakravarti Mandhata and another showing a holy shrine or *punyasala* (pl. VI, fig. 2) are important among them.

Medieval and later sculptures.—There are over 350 specimens of stone sculpture belonging to the period from about 600 A.D. to the recent times, in the Section. Of these, about 50 are Jain, about 25 memorial or hero-stones, about a dozen Buddhist figures, about 10 snake-stones and the rest of Hindu deities. It is as much true of stone sculptures as of metallic figures that to whatever faith they may belong, the features of the art of the period are marked in the sculptures of the period, except for minor local variations. The Hindu sculptures are shown in two galleries. In the New Extension typical examples of South Indian sculpture from the Tamil country and from the other areas are shown in the chronological order. In the general Hindu sculpture gallery, the remaining specimens are shown. The noteworthy specimens from the Tamil country belong to the Pallava and Chola periods (circa 600–1300 A.D.). Among the Pallava sculptures, the figure of a horned Dvarapalaka and the Yoga Dakshinamurti shown in the New Extension and

Hindu Sculpture Gallery

the figures representing Virabhadra and six of the seven mother goddesses (pl. VII) shown in the other gallery are fine examples. Of the Chola sculptures, the mutilated figure of Shanmukha (pl. VIII, fig. 1) and the Parvati figure shown in the New Extension and the group of Vishnu and his consorts and the Gajalakshmi figure shown in the other gallery are noteworthy. Representing the art of the Pandyan territory of the period are a few specimens of which the figures of Agni (pl. VIII, fig. 2) and Vayu from Tirunelveli are the best. The sculptures of the subsequent periods are lacking in expression although the figure of Bhikshatana belonging to the Vijayanagar period shown in the New Extension retains some of the beauty characteristic of the figures of the earlier periods.

The sculptures from the Telugu and Kannada speaking areas include specimens of the art patronised by the royal dynasties of these areas such as the Chalukyas, Nolambas, Hoysalas, etc. Here also the sculptures belonging to periods earlier than the Vijayanagar period are noted for their beauty and expression. Of these early sculptures, the Ganesa and Dvarapalaka figures of the *Eastern Chalukyan period*, the *Vinadhara* Dakshinamurti figure (pl. X, fig. 2) of the Nolamba period and the Saptamatrika group of figures of the Hoysala-Kakatiya period, all shown in the New Extension, are works of high artistic merit.

The Jain sculptures of the Section are shown in a room beyond the Buddhist sculpture gallery. They are mostly representations of Jain Tirthankaras in the usual stiff posture. But the figure of a Tirthankara from Tuticorin, the figure of Mahavira (pl. IX) from the South Arcot district in the Pallava style and the figures representing Mahavira and Parsvanatha from Danavulapadu in the Cuddapah district belonging to the Rashtrakuta period, show features characteristic of the art of the period to which they belong.

That Buddhism continued in the Tamil districts long after it ceased to exist in other parts of South India, is proved not only by the Buddhist metal images from Nagapattinam but also by a few stone figures of the Buddha belonging to this part. However, the smallness of the collection is indicative of the fact that Buddhism was not followed by many. Of these Buddhist stone images, the more than life-size figure of standing Buddha (pl. X, fig. 1) from Kancheepuram is interesting.

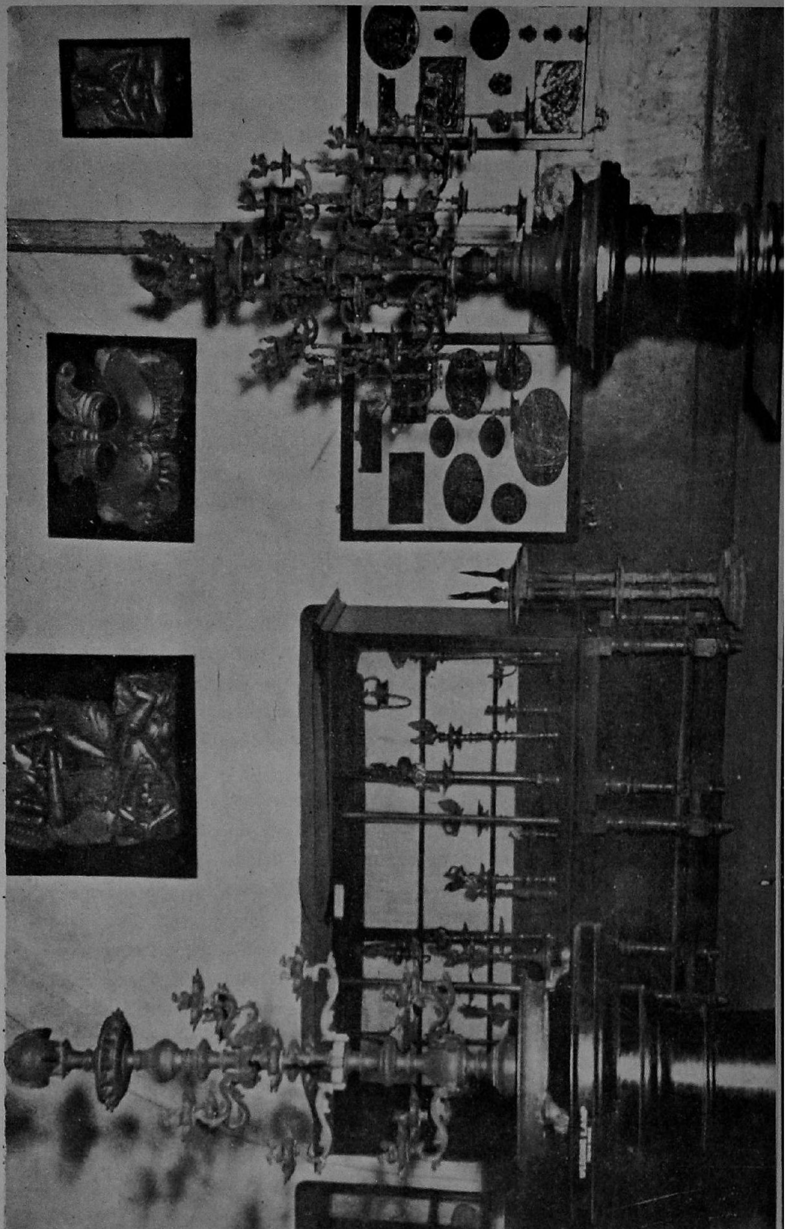
Though there are only a few specimens representing each of the groups of sculptures such as hero-stones, memorial stones, sati stones and snake stones, they are valuable not only because they throw light on the life of the village people of ancient South India but also because of the inscriptions on them. The snake stones, as a group, are specially interesting as they reveal the fact that the people still continue the worship of snakes, an ancient practice, in a modified form.

Architectural pieces.—About 50 pieces consisting of corbels, *kudus* gargoyles, gateways, etc., belonging to ruined temples of South India are shown in the New Extension and the general Hindu sculpture gallery. Of these the corbels and the *kudus* are arranged in series in the Hindu sculpture gallery showing their development during different periods in the Tamil country. Among the pieces of the temples of the Telugu-Kannada area, the piece that shows a miniature *vimana* with combination of features of the architecture of the Tamilian and Deccani styles, exhibited in the Hindu sculpture gallery, and the doorway in the typical Hoysala style shown in the New Extension are noteworthy.

Inscriptions.—There are over 350 copper plate inscriptions and about 100 stone inscriptions in the Section. Their contents are of high historic and social interest. Further, as they belong to different periods and localities, their scripts differ and a study of these grants helps to follow easily, the development of the scripts now obtaining in South India.

The copper-plate inscriptions acquired up to 1917, numbering over 200 have been published in the form of a catalogue. Subsequently abou 150 inscriptions have been added. These inscriptions are mostly records of grants of villages or plots of cultivable lands to private individuals or public institutions, by the members of the different royal dynasties that ruled over South India. The grants range in date from the 3rd century A.D. to recent times. A large number of them belong to the Chalukyas, the Cholas and the Vijayanagar kings. Of special interest are the Maydavolu and Hirahadagalli plates of the early Pallava dynasty and the large-sized grant (pl. X, fig. 3) acquired from Tiruvelangadu, issued by Rajendra Chola I. The latter consists of 31 large plates strung on a ring to which is attached a seal showing the Chola emblems and Rajendra's legend in relief. This is not only interesting as an "epigraphical curio" but its contents, especially the genealogical portion, are also valuable.

The stone inscriptions include inscriptions in Brahmi, Vatteluttu, Nagari, Telugu, Tamil and Kannada scripts. Of the Brahmi inscriptions, the Bhattiprolu stone reliquary inscriptions are important as the alphabet employed here is considered to be earlier than 200 B.C. This suggests that there was a variety of Brahmi script in vogue in the South, long before that period. The Brahmi inscriptions from Amaravati and Jaggayyapeta are important both for showing the further developments of the script and for revealing several technical terms which could not be known otherwise. The Vatteluttu inscriptions include also those on the hero and memorial stones, already referred to; this script was in use in the southern region of the Tamil country till a late period and most of the early Pandyan and Kerala inscriptions are in this script. In order to show the development of the scripts of South



India from the Brahmi script, specimens of original inscriptions in the different scripts such as Telugu, Tamil, Kannada, Brahmi and Nagari are shown in separate groups, arranged on the mezzanine floor of the New Extensions, in chronological order, headed by a plaster cast of an Asoka inscription and followed by a chart showing clearly the different stages of development of each of the scripts. The remaining stone inscriptions are exhibited in the Archaeological Reserve Collection shed.

Industrial Art. The exhibits of the Section consist of specimens of wood carving, ivory carving, metalware and inlay and embossed works. Their total number is about 1,450. The wood carving of South India is noted for its wealth of details. A great majority of the Museum collection of wood-carving belong to old temple cars. They represent the various deities of the Hindu pantheon. Some of the representations of figures are unique as corresponding representations of the figures in metal are not met with.

The ivory carvings include representations of animals such as cows, deer and deities such as Vinayaka by traditional carvers of Mysore, Travancore and Visakhapatnam. The excellence of workmanship of the carver is revealed by the intricate work of an ink-bottle holder, among the collections.

The metalware objects consist of lamps of different types, utensils used in temple and household worship, toys and luxury articles such as betel boxes and nut crackers. Each one of these groups is of great interest. Especially, the collection of lamps is remarkable for the multiplicity of types and the delicacy of workmanship. Of these, the large lamps with festooned branches spreading out, exhibited in the centre of the metalware gallery are noteworthy.

The Tanjore metal vessels and Bidri ware exhibited in the gallery are also of interest.

Paintings. There are about 300 paintings in the section. A good number of them are in the Tanjore style, characterised by delicate brushwork and realistic touches. There are also a few Deccani (Cuddapah) paintings including two large paintings showing the army of a Muslim ruler in procession. These are noteworthy for the bold rendering of the subjects with dark colours with an eye also on the delicate outline. There are also a few paintings representing the Rajput and Mughal schools in the collection. A few paintings by modern artists, Ravi Varma, Raja Raja Varma, Rahman Chugtai and Narayana Rao are exhibited in the picture room. This collection of paintings is being augmented by the addition of copies of ancient mural paintings from Ajanta, Bagh, Panamalai and Sigiriya.

Botany and Geology

By Sri M. S. CHANDRASEKHAR, B.Sc.
Curator, Botanical Section

THE BOTANY AND GEOLOGY Sections are dealt with together here as it has been the practice for the Curator of the Botany Section to have charge of the Geology Section as well. It cannot go unrecorded that considerable help in the organization of the Geological gallery has always been forthcoming from many enthusiastic geologists, chief among them being Dr. C. S. Fox, Dr. M. S. Krishnan and Sri N. K. N. Iyengar of the Geological Survey of India and Prof. T. N. Muthuswamy Iyer of the Presidency College, Madras. Both the Botanical and Geological Sections have outgrown the capacity of the present strength of their staff, and the need for their separation is now being realized. It is hoped that the Geology Section will be given independence which is its due as soon as the position of the State funds improves. Important features of the Botany and Geology Sections can be arranged under (1) public galleries, (2) reserve collections, (3) special exhibitions, (4) research and publications and (5) information service.

Public galleries.—The galleries were dismantled at the time of the evacuation of the City in 1942 and this has incidentally rendered it possible to effect thorough overhauling and improvements to them. The different groups of exhibits are explained by descriptive labels, while prominent index labels serve as a good guide. Tamil and Telugu names are also included, wherever possible, on labels relating to the individual exhibits. A look round the galleries will convince any visitor that there is a great scope for expansion, if only more funds and exhibition space are available.

Topics in the Botany galleries of the Museum fall under (*a*) Systematic Botany, (*b*) Economic Botany, (*c*) Ecological Botany and (*d*) Miscellaneous collections (meaning other branches of the subject, that are not covered by the preceding three heads).

In the Systematic Botany portions of the galleries, the exhibits are arranged in their evolutionary order, starting with primitive Cryptogams. They are too many to be referred to in detail (families of flowering plants number over 150). They interest not only botanists but also the general public. To

mention a few, there are huge bracket fungi (one of them about 3½ inches in thickness and 1 foot in diameter); a gigantic toadstool (1 foot tall, the circumference of the stipe measuring 8 inches and the pileus having a diameter of 7 inches).

Sri K. S. Srinivasan, Curator, Botany (1940-1947)

Exhibits in the Economic Botany galleries are divided into several groups according to their uses. The abundance of information furnished to botanists, industrialists, and the general public, can be appreciated best only by a personal visit. A reference can, however, be made to a few prominent collections. There are over 300 representative samples of various South Indian timbers, among which are two large transverse sections of trunks of rosewood and teakwood trees of over 200 and 500 years of age, respectively. The circumference of the rosewood trunk is 21 feet and that of the teakwood, 23 feet and 9 inches. The girth of the latter at the end of every hundredth year of its growth, and a few historical events, with dates, that took place during the lifetime of the tree, are marked out on it, so as to make them interesting. There is a choice collection of fibres, spread over a considerable part of the galleries. Though they are not exhaustive, they certainly throw light on the vastness of our fibre resources. Plant materials that are required for the extraction and manufacture of several drugs, occupy quite a conspicuous area. Our country's resources are indeed vaster than these; and the visitors, who see them, generally feel surprised at the import figures.

Representation of Ecological Botany in the public galleries has been started only recently and is expected to be completed in due course. The exhibits chiefly consist of a number of photographs and a few specimens. Amongst the latter, insectivorous plants command popular interest. But, the community of liverworts on a fragment of a boulder, the community of mosses on leaf mould (pl. IV, fig. 1), and the viviparous germination of a mangrove seedling, cannot escape admiration. They are all actual specimens collected from nature and carefully preserved.

Under miscellaneous exhibits, can be mentioned besides others, a specimen of the bark of *upas* tree. It measures over 5½ feet × 3 feet and suggests that

our ancients probably clothed themselves with barks of its kind. A fine cap, made of the same bark, is also exhibited. Miniature models of a handloom and a bullock-driven oil-press are commendable.

The public galleries of the Geology Section are devoted to (*a*) General Geology, (*b*) Stratigraphy, (*c*) Minerals, (*d*) Rocks, (*e*) Economic Geology, (*f*) Special isolated Collections and (*g*) Index Collections.

Under General Geology are illustrated the structural details and the surface architecture of the earth. The photograph of the earth from 100 miles up, the plaster model showing the internal structure of the earth, and the contour model of the Madras and Chingleput districts are admired by most people.

The subject of Stratigraphy is confined to the Indian Sub-Continent. The exhibits consist of typical samples of beds of a few important geological strata (of which, the flexible sandstone is of popular interest) and fossils of different ages. The latter (fossils) are arranged in the order of their strati-graphical sequence and mostly belong to the animal kingdom, especially

Model of Brontosaurus

the invertebrates. Some plant fossils from the Gondwanas are also there. A gigantic Ammonite *sp.* among the invertebrate fossils, and a model of the herbivorous *Brontosaurus* among the vertebrates arrest, for a while, the attention of most visitors.

The mineral exhibits are numerous and arranged in the order of their chemical composition, some outstanding examples being specimens of rock-crystal, silicified wood, doubly refracting calcite, picrolite (common, massive serpentine) altering into chrysotile (fibrous serpentine), a large specimen of coal showing its stratified structure, etc.

The rocks are arranged in the order of their origin and form a representative collection. Samples of soils from different parts of the State are also exhibited.

Prominence is given to Economic Geology. A fine collection of building stones is displayed over a conspicuously large area. Minerals used as gem stones, illustration of the extraction of gold at the Kolar Gold Fields, ores of a few rare and a few common metals, etc., constitute an interesting series.

Certain topics in Geology, which do not fit in well with those hitherto mentioned, are kept separately in small show cases as isolated groups. A small collection of meteorites, thus isolated, becomes really interesting when it is known that the objects are all extra-terrestrial bodies, excepting one of them which, too, is an exact replica of the original. Another isolated group, worthy of special mention, is that of Carboniferous plant fossils of Britain.

Index galleries are intended mainly for research-workers. Their re-organization and re-arrangement have not yet been completed. They are, however, accessible to those who specially want to see them.

Reserve collections.—All duplicates, triplicates, etc., and those materials which, for some reason or other, are not exhibited in the public galleries, are separately stored as reserve collections. They are accessible to scholars and research-workers, and to those who are directly interested in the subject. A special mention may be made of the collection of textiles (which are a few rare specimens of our art and industry (pl. IV, fig. 2), and of the Herbarium (which may be said to be second, in this State, only to the Madras Herbarium of the Agricultural College and Research Institute at Coimbatore). An excellent fossil, showing some details of the Proboscidean molars, is also noteworthy.

Special exhibitions.—Special exhibitions are periodically arranged in order to give publicity to the new accessions and important older collections. "Sea Forest," "*Pectis papposa*," "Beauties in stones," "Important Mineral Resources of India," "Meteorites," "Rock-salt," etc., were the themes of some of the recent special exhibitions.

Research and publications.—" The flowering plants of the Madras City and its immediate Neighbourhood " by the late Sri P. V. Mayuranathan, and a supplement to it, by the late Prof. E. Barnes, are notable among our contributions to Botany. Studies on the ferns of the Madras State are now on hand. A new and cheap method of preservation of plant materials with green colour has been worked out; the details will be published after the technique is perfected. Naturalization of a few foreign plants has also been successfully experimented. A cheap method of preservation of large, hygroscopic crystals has been tried with complete success; its details are expected to be published in due course.

Educational service.—Guidance on matters of collection, identification, preservation, storage, etc., is freely given (in the form of advice or references) to educational institutions, museum-keepers, industrialists, and others. Periodical demonstrations are held to organized parties of teachers, on how best they could enable their pupils to make a profitable visit to the Botany and Geology galleries. Short condensed courses in organization and maintenance of school herbaria, and botanical and geological museums, are also conducted for batches of teachers from different parts of the State. Organized batches of illiterate visitors are helped round the public galleries by an official of the status of Assistant Curator.

PART V

SPECIAL ARTICLES

In these articles His Excellency Sardar K. M. Panikkar indicates new lines of historical research; Dr. M. S. Krishnan, the first Indian Director of the Geological Survey of India, writes of Geological studies in Madras; Dr. J. H. Cousins on the beginnings of art collections in the Museum and Dr. B. S. Guha writes of the Abors whose material culture forms part of the Centenary Exhibition

Problems of Indian History

By His Excellency Sardar K. M. PANIKKAR

W. M. YOUNG in his "Last Essays" has defined his approach to the problems of history in the following words: "How did people talk, what did they think. how did they amuse themselves, in fact how did they live through events that mark the changes in a period?" The records of such an approach are available everywhere: and the continuity of a nation's history lies in the fact that broadly there is a similarity between how they talk, live and think now and how they talked, thought and lived in the previous periods of their history.

When we say, for example, that Egypt's history is not continuous while India's and China's is, it is this basic fact we have in mind. The geographical features of Egypt have not changed any more than India's or China's. The Nile flows as majestically as do the Ganges and the Yangtze. The deserts are as much a feature of Egypt to-day as the Himalayas and the Vindhyas are of India. Racially also the changes could not be much greater, for both India and China, during the last three thousand years have been subjected to invasions and conquests in the same manner as Egypt. But the people of China speak. feel and think much in the same way as in the time of Confucius or indeed earlier and the difference is one of economic, political and social evolution, which has not basically altered the characteristics of the people. Confucius will recognize the present-day Chinese as his descendants, as we recognize our children and grandchildren. The same is true of India and Persia. The Buddha will recognize Aurobindo, Chanakya will recognize Patel, Kalidasa will not find the poetry of Tagore strange. It is not that they will only recognize them as being their own flesh and blood, but as being interested in the same things as they were. But could the same be said of Tutenkhamen and, say, King Fuad.

So it would not be wrong to emphasize that continuity through thought and forms of social life constitutes the history of a nation. If that be granted, then the best historical material is that which is contained in the literature

of a people, using the term in its widest sense. Poetry from the Veda to Tagore, with its infinite local variety and richness, laws from Grihya Sutras and Manu to the Sarda Act, religious texts from the Upanishads to Rajaji's interpretation of them, the great epics in their varied forms in the different languages, the temples in the evolution of their architecture, gods in their transformation—these would then be seen to constitute the substantial material of Indian history.

Looked at from this point of view, there are numerous problems which await the serious study of historians. It is often said that there are gaps in the story of India : that the names of kings and chronology of dynasties at certain periods are not fully known : that the geographical extent of empires is often in doubt and that it is difficult to make out the truth from the vainglorious inscriptions of pretentious monarchs. All this is true and no doubt the patent researches of archaeologists, epigraphists and other estimable and learned men of that kind will provide us with more and more details of forgotten kings and half-remembered dynasties. Their coins will be studied ; their inscriptions will be deciphered and their buried cities will be made to yield their secrets. Very important results will no doubt be obtained, but the major problems of Indian history, as I view them, will not be solved by such learned activity. In order to make the point clear, I shall endeavour to formulate a few of the more important questions that await solution or explanation, which would be forthcoming only as a result of an intensive study of the literary and social materials all over India :

(1) What social and political changes are responsible for the revolution in literature as witnessed by the changes in Mahakavya styles from Kalidasa's *Raghuvamsa* to Harsha's *Naishadha* ? Clearly, a revolution had taken place of which the stages can be traced to Bharavi, Magha, Shri Harsha and Abinanda. The direct, vigorous and humane poetry of Kalidasa, reflecting a contented, prosperous and stable society is replaced by something artificial and unrelated to life.

(2) The approach to Sringara in the later Sanskrit poets also requires a social explanation. While it is true that the 8th Sarga of *Kumara Sambhava* and the 2nd part of *Megha duta* bear witness to a society which was sensuous—differing greatly from the simplicity of the epics and Bhasa's dramas, the vulgarity and grossness of later Sringara poetry which, though often pornographic and obscene, evoked no protest is a historical fact which cannot be explained merely as a decline in taste. The description of amorous alliances in *Nara narayania* of the great Vastu Pala and in the erotic verses of Ananda Vardhana and Hala (as indeed in so religious a poem as Gita Govinda) cannot merely be explained away as idiosyncracies of taste. Besides, Kshemendra who was one of the great educators of his time and reputed to be a man of the

highest character was also the author of *Samaya matrika*, or the experiences of a prostitute, while Damodara Gupta, a man of the highest standing in the society of the period. wrote *Kuttini matom*, a poem of extraordinary beauty, but dealing without any sense of restraint, with the life of a courtesan.

(3) The *Bhana* literature is another example of the same development. The authors of this class of literature, which must have enjoyed great popularity, though it deals with the depraved lives of go-betweens, prostitutes and degenerates, were men of the highest position, people like Vatsamatya, the Prime Minister of a powerful king, Ramabhadra Dikshita and others. It is to be remembered that this is also the time when *Vamamarga Acharas* of the *Sakti* cult had their greatest vogue and *maithuna* sculptures became popular in temples.

The pre-eminence of courtesan themes in later literature, as different from the earlier classics can only be ascribed to the greater restrictions on social life, which must have come about at some time. Another contributing factor would seem to be the restrictions of literature to urban themes. It is to the nagarikas to whom Vatsyayana was the text-book that the later literature caters. In fact, it is difficult to understand *Amarusataka* and Ananda Vardhana's *Sapta sati* without a detailed study of the *Kama sutra*. Both of these, no doubt, show a virtuosity in selecting and describing moods of love, but its physical base is hardly natural but based on the sutras of Vatsyayana.

In this connexion, two further questions suggest themselves which have a tremendous significance for India's social history. First of all why has there been an exclusion of rural themes in Sanskrit poetry ? To find any description of village life one has to look into books like Hala's *Sapta Sati* in Prakrit, which deals of grama palas, peasants, thieves and the amours of ordinary folk. The second question for which no adequate explanation is forthcoming is why there is no picture of middle-class city life in our classics. We get occasional glimpses in *Kathasaritsagara* and allusions here and there in Bana. Even in *Mricha-katika* and *Malati madhava*, which picture secular life, there is but little that deals with the daily routine of ordinary men and women. The case is not very different in our vernacular literatures. So far as I know, till we reach quite recent times, the normal social life of the people find but little reflection in the great regional languages of India.

The changes in temple architecture must also have political and social significance and can only be explained in terms of widespread cultural movement. From the simple beginnings of the early temple pictures on Barhut railings, to the more elaborate structures of the extant specimens of the Gupta temples we have a development, the social significance of which it is difficult for us now to estimate. Again, the growth of cave architecture from the Ajivikas in the second century B.C. to the great cathedral caves in the Deccan representing an immense and continued human effort through centuries is a historical

development which has to be traced step by step if we are to understand its historical significance. Many other questions regarding Hindu, Buddhist and Jain temples remain to be answered. When did Hindu orthodoxy copy the Buddhists and the Jains in making cave shrines ? What is the origin of the special Orissan type of temple architecture, which is not classified either as *Vesara* or *Dravida* ? How did the Dravidian type transform itself from the simple *raths* of Mahabalipura to the ornate glories of Tanjore, Srirangam and Madurai ? Some work of great value, but mainly of a technical character, has been done in this field by Dr. Coomaraswamy, Stella Kramrisch and P. K. Acharya. But their social and historical aspects still remain to be explored.

A version of Indian history from at least 600 B.C. till our own times could perhaps be written on the basis of the evolution of *Dharma Sastras*. Every generation has produced commentaries and digests--*nibhandhas*, which reflect the legal thought of the time. The evolution of this legal thought, its alternating laxities and rigidities, its local variations, its growing emphasis through certain periods of the *prayaschitta* doctrine, reflect more than anything else changed political, social and economic conditions. The general social history of each succeeding period could be worked out by relating the changes in legal thought to the economic and political conditions of an era. Surely, it is not without significance that some of the most important of these digests were written during the period of Muslim predominance ; for example *Todarananda*—the encyclopaedic Dharmasastra which was compiled under the patronage of Raja Todar Mal, in the time of Akbar. The wealth of Dharma Sastra literature during the Muslim period would show that the main concern of Hindu society at the time was the maintenance of social structure and its preservation from the influences of Islam. Hindu social structure was facing a grave crisis. The impact of Islam had created for Hinduism special problems which could not be overlooked. The reaction of Hindu lawgivers to this challenge was in general to make Hinduism more rigid and to re-interpret the rules in such a way as to resist the encroachments of Islam.

A parallel, though opposite tendency may be noticed in the modern *nibhandhas* from Colebrook's digest of Hindu law to the latest edition by Hindu legalists from Mayne's classic work. A social and economic history of the Hindu people based on a study of this vast literature covering over 2,500 years should help to illumine many of the dark periods of Indian history.

Another fruitful line of enquiry which has also not been attempted yet is the growth of Prakrit and its separation in the regional languages of India, side by side with Sanskrit. That Prakrit existed as a literary language even during the period of Sanskrit's most magnificent efflorescence is established by the simple fact that Prakrit verses are interspersed in Sanskrit dramas. From

Bana's time at least its independence as a literature is recognized. A comparison of Prakrit literature with its contemporary Sanskrit literatures should yield most valuable results. In fact, even a casual examination of the treatment of the same themes by Ananda Vardhana and Hala would show the importance of this line of work. Again a comparison of the works of the great Brij Bhasha poets with those writing in Sanskrit during the same period by poets like Kavindracharya and Jagannath Pandit should bring out social facts of the highest significance. The vigour, freshness and direct appeal of Kabir, Nanak and Tulsidas in Hindustan, of Chandidas, Vidyapati and others in the East and the great Tamil poets in the South would help to establish the great rejuvenation of the Hindu mind in the mediaeval period, at a time when Jagannatha Pandita, Appayya Dikshita and the court poets of Vijayanagar were echoing in faultless style the dead sentiments of earlier ages. The study of Jaina Sanskrit with its variations of Hindu puranic literature especially in Hemachandra Suri's great epic *Purusha charita* and in the works of the poets that followed him, cannot fail to produce results of exceptional value.

In the realm of economic history also a few basic questions may be formulated here. How can the continued importance of the Vaishya caste be explained when the Brahmins as a caste lost influence for a few centuries and the Kshatriyas ceased to count in social order? We know that in the Buddha's time the Vaishyas held the purse strings and were generous in supporting the *sangha*. Innumerable inscriptions, grants and temple foundations of the early centuries of the Christian era bear witness to the continuing power of capital. In the middle ages, such figures as Vastupala and Tejapala and the great commercial magnates of the ports dominate many historical scenes.

The treatment of Vaishyas in literature is a very important question. The Hindu epics hardly mention them, while in Jain and Buddhist stories they play leading roles. In *Sakuntalam*, there is an allusion to a rich merchant who dies childless, but the story is brought in to emphasize the generous nature of the Kshatriya King and to heighten his own sorrow. Visakha Datta's *Mudrarakshasa* has the character of Chandana Dasa, the faithful friend and confidant of the fallen statesman. The *Bhanas*, however, introduce a good many Vaishyas, but seldom in a friendly or complimentary manner. It is only in Soma Deva's *Kathasaritsagara* that we get a picture of Vaishya society in Hindu literature. There the merchants are described as not only being rich, but as adventurous, travelling all the time on business, sailing the high seas and carrying the trade of India to far off islands.

Enquiries into domestic economy, food, clothing, etc., are long overdue. Here again literature provides ample material. To take two specific questions: When did Indian society develop its present attitude of disapproval towards intoxicating liquors? Both in classical and in popular dramas wine

drinking is considered normal. Kalidasa goes to the extent of making Parvati intoxicated during her honeymoon and even a casual reader of his poems and plays cannot fail to reach the conclusion that wine drinking was prevalent not only among higher circles, but among the common folk also, witness for example the suggestion of the police officers to the fisherman in *Sakuntalam* that they should now adjourn to the tavern. As late as the 15th century Gangadevi in her *Madhura vijayam* talks with personal experience of drinking revelries inside the Vijayanagar palace. Nor is there any caste restriction alluded to in this matter.

Again, when did vegetarianism become orthodox? The Kshatriyas of course always ate meat. But among the Brahmins and the Vaishyas the tradition became strong at some unascertainable period of history. The Brahmins were not always vegetarians and even now in some areas they eat fish and in some others meat. The statement of difference between northern and southern Brahmins as *Uttaré mamśa bhojanam Dakshiné matula kanya*: in the north they eat meat; in the south they marry maternal uncle's daughter, also shows the prevalence of meat eating at least among northern Brahmins.

Another line of enquiry likely to throw considerable light on the social life of India is in regard to the use of cosmetics and other aids to beauty Classical literature abounds in allusions to lipsticks, face creams and scents Though the use of perfumes continued without break, lipsticks, creams and powders seem at one time to have gone out of fashion in decent society. The use of *tambula* is perhaps among the oldest social customs of India and the allusions to it are continuous. A large symbolism has grown up around it. Its spread to the entire area of South East Asia, to the countries which at one time fell under the sway of Indian civilization, is an astonishing historical fact and is worth a detailed study. An interesting essay on this subject will be found in Penzer's edition of the Ocean of Story.

A subject of supreme sociological interest which could be studied in both Sanskrit and vernacular literature is the position of dancing girls in different periods. The Buddha dined at the house of one and accepted gifts from her. In the *Bhagavata* and in the *Mahabharata* we have the story of the dancing girl Pingala who attains spiritual illumination. The position that Iravati, a dancing girl, came to occupy in the Court of Agnimitra would seem to indicate that dancing was still a respectable profession. But with Vasantasena, the heroine of *Mrichakatika*, the position has already undergone a change, while with *Samaya matrika* and *Kuttinimata*, the profession has become disreputable and identified with that of the courtesan. Their education is touched upon in many books. In a Malayala Kavya entitled *Chandrotsava*, there is an interesting description of the education and amusements of a courtesan. She is pictured as spending her leisure reading *Sakuntalam*,

Malavikagnimitram and other classics. A vast storehouse of knowledge about social conditions in India in different parts will be opened up if a careful and sifting study is made of the literary material available on this subject, especially in the Bhanas.

A different subject but one which is closely bound up with the whole texture of Indian history is the rise and decay of the centres of sacredness. Some like Benares and Kurukshetra have remained sacred throughout our known history. But others have not been so constant in their popularity. Of the many sacred spots mentioned in the Mahabharata there is difficulty in even identifying some. Also every generation has added new centres of pilgrimage and increased the sanctity of some, while some others in some mysterious way seem to lose their power. Arunachalam is a recent instance of a place, already sacred, which has added to its sanctity. But many questions have to be answered by the historian in regard to these places. When did Benares first become sacred? We know it was an important place at the time of the Buddha, but was it sacred? There is little in the *Ramayana* and *Mahabharata* stories indicating the sacredness of Benares. But by the first century A.D. we have the Bharasiva inscriptions which testify to the primary fact that Benares had achieved a great position in the meantime. Again, the great southern *Tirthas* of Rameswaram and Gokarnam, though consistently held sacred during the last thousand years, seem to have had their ups and downs in popularity. The changes in pilgrimage routes seem to have affected many centres. For example, the route to Benares from the south, before the period of the railways, was via Gokarnam, Karwir and Nasik all places of great importance. But railway travel has diverted the traffic, affecting the popularity of many places.

Again, *Tirthas* as motive forces in Hindu policy require examination and study. We know for centuries Hindus attempted to restore Somanath. The persistence of this motive, which moved generation after generation up to Aurangazeb's time is a fact, the importance of which we have begun to realize only today. Similar is the case of the successive restoration of the Kesavaswami Temple at Muttra. The recovery of sacred places as a major factor of policy is best exemplified in the cases of Vijayanagar and the Maratha Empires. In the *Madhura Vijayam* of Gangadevi there is an eloquent passage where a mysterious lady appears before Vira Kampana and describes to him the miserable plight of the great temples of Srirangam and Madurai and conjures him to drive the invaders out of these holy places. The zeal of Baji Rao, the Peshwa, to bring again under Hindu control the sacred cities on the Ganges was one of the most powerful inducements of the policy of northern expansion of the Maratha Empire.

I may conclude these fragmentary observations with an allusion to another subject which is growing in importance today. When did the people of Northern India develop a prejudice against sea-voyages ? In South India and in Gujerat this prejudice never gained wide prevalence, but at a certain stage it became almost a national tradition in the Gangetic valley. Albuquerque during his conquest of Malacca noticed that many Hindu merchants from Gujerat were engaged in spice traffic there. In fact there was a Hindu section in the city of Malacca itself where merchants from Bengal and the West Coast of India congregated. We know of the Rajput navigator of Cutch who took his *dhow* to Amsterdam in the 17th century and though in Kathiawar and Cutch the tradition continued fairly strong, elsewhere in the north sea-voyage became less known. When and why are fit subjects for enquiry.

These are but a few problems, indicated at random, on which among others, Indian sociologists and historians could usefully concentrate. They are *important* because they deal with the substance of history, that is the continuity of India's civilization through ages, rather than with isolated facts. Perhaps it is not reasonable to expect Universities with their set courses of study and emphasizing, as they must inevitably do, political histories, to give to these aspects of the question the emphasis they deserve. But there is no reason why scholars should blindly follow the line set by text-book writers and not contribute by individual work to a better understanding of Indian historical evolution.

Progress of Geological Work in Madras

By Dr. M. S. KRISHNAN

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THE USE OF the minerals and earth materials found at and near the surface of the earth dates back to a remote period which may be as old as the appearance of man himself on the globe. In the stone age, stone implements may have been the only materials of a mineral nature used by man, but, as he became more and more civilized, other things must have been gradually added to the list of useful materials. Thus in early days, in addition to naturally occurring stones, clays and white or coloured ochres and mineral pigments must have been put to use.

At a later stage, man must have found native metals of which copper, gold and silver were common at one time. We can only surmise how iron and bronze were made. Perhaps the discovery of the process of smelting iron and copper may have been accidental. However, with the use of metals by man, a vast new field was opened up, the limits of which are still expanding. Indeed the present-day civilization differs from the earlier ones chiefly in the numerous uses to which metals and minerals are put, which make possible modern rapid transport, communications and industries.

Before the advent of European traders and adventurers into India, a fair variety of earth materials was in use. Even in early historic times, we find that civilized communities existed in towns of some size and that they were well advanced in the use of metals and minerals. It is known that, for some centuries before Christ, wrought iron and steel were being manufactured in many parts of India in small furnaces. The aggregate quantity of such iron and steel produced every year must have run into a few hundred or even a few thousand tons. As has been shown by Sir Thomas Holland, one type was a carbon steel and the other a partially de-carburized variety. It is known that Indian steel of different descriptions found its way to the market of the Eastern

Mediterranean, particularly Damascus, where it was well-known in the first millennium before Christ. It is on record that, even during the last few years of the 19th century and early in the present century, there were many such iron smelting furnaces in the interior districts in India, wherever iron ore of some sort was available.

The systematic study of minerals dates back only to a couple of centuries. This study progressed more or less simultaneously with the advance of knowledge in the fundamental sciences of Physics and Chemistry. The industrial revolution in the West which brought about the use of mechanical power and machines greatly accelerated the use of metals and minerals for various purposes. Mining became a systematized art for the production of the necessary raw materials from the earth's crust in order to feed the industries.

When the British established trading posts in India, they sent out a few people with some knowledge of the raw materials needed for the British industries. In addition to the acquisition of the commodities required for the common use of civilized life such as cloth, spices and other materials, the East India Company also encouraged its officials, both civil and military, to look around in search of useful metals and minerals. Hence, much information was collected by the servants of the Company on the geology of India during the course of their normal work which took them to different parts of the country.

In addition, the Company seems also to have had geologists with official standing like H. W. Voysey and P. W. Wall, who made systematic studies of mineral deposits such as the lead and zinc ores in Cuddapah and Kurnool and coal in the Godavari districts. These professional and amateur naturalists made numerous contributions to several of the periodicals available at that time as a result of geological and other observations made by them during their journeys in various parts of the country.

Many of the early papers on South Indian Geology and Minerals were contributed to a journal which was published at Madras, called the "Madras Journal of Literature and Science." It had apparently great vogue as we find that well-known officers of the Geological Survey of India—Blanford, King, Foote and others—have also contributed to its pages in the latter part of the 19th century. Papers appeared also in the Journal of the Asiatic Society of Bengal which had been founded early in the last century by Sir William Jones in Calcutta. Many reports were also made to the administration of the time and these were published much later in the "Selected Records" of the Government. A few separate books and monographs were also published, amongst which mention may be made of the papers on marbles, iron ores, abrasive materials, etc., by E. Balfour, published in Madras between 1854 and 1857.

Amongst the very early observers were a few travellers who have made important contributions to our knowledge of South Indian Geology. One of these was Jean Baptiste Tavernier (Baron of Aubbonne) whose account of travels in the Middle and Far East was published in London in 1665–69. It was translated by V. Ball and published in 1889, apparently because of the geological information, especially accounts of diamond mining it contained. About the same time, in 1667, appeared a description of the diamond mines of South India in a paper presented by H. Howard, the Earl Marshall of England, and published in the Philosophical Transactions of the Royal Society of London (Volume XII, pages 907–917). Another traveller was Francis Buchanan Hamilton who was in South India in 1800–1801 and who was responsible for the invention of the word *laterite* to name the ferruginous and aluminous weathered product of rocks in the tropics. The type material of laterite is at Angadipuram in the Malabar district. His work was published in three volumes in London in the year 1907. A fourth was Benjamin Heyne whose fairly extensive travels in India are recorded in his " Tracts, historical and statistical, on India, with journals of several tours in various parts of the Peninsula . . ." was published in 1814 in London. Still another traveller at the same period, Leschenault de la Tour made a collection of rocks from the Salem district, one of which from Sittampundi contained the calcic felspar anorthite to which Count de Bournon gave the name of *Indianite* about the year 1817. Recent work shows that this is the purest naturally occurring anorthite known, containing over 99 per cent of the anorthite molecule.

A few others have also made important contributions to South Indian Geology. H. W. Voysey prepared, in 1820, first geological map of the Hyderabad region, which was the first such map for any part of India. T. J. Newbold has contributed many papers containing observations made during his extensive travels between 1833 and 1850. Alex Hunter published in 1850 a " List of Articles of the Mineral Kingdom, the produce of the Madras Presidency " and another in the subsequent year entitled " the Resources of the Madras Presidency." Amongst the contributions of E. Balfour, to which a reference has already been made, is a " Cyclopaedia of Eastern and Southern Asia, commercial, industrial and scientific " originally published in 1857, a second edition in 5 volumes in 1871–73, and a third edition in 3 volumes in London in 1885. These were in some measure the fore-runners of Watt's " Dictionary of Economic Products " which was published in 1889 and later.

The systematic geological survey of the Madras Province was begun only after the establishment of the Official Geological Survey in or about the year 1851. The headquarters of this organization was at Calcutta and it is interesting to note that it is still in Calcutta in spite of the fact that the seat of the

Central Government was shifted to New Delhi after the Delhi Durbar of 1911. Those were days of broad general observations without the help of properly equipped laboratories with which we are now familiar and on which we have to depend greatly now-a-days. Even the microscope began to be used as a regular tool in this country only from about 1880. The geologists of the official survey to whose work we owe a greater part of our knowledge of the geology of South India are C. AE. Oldham, H. F. Blanford, Bruce Foote, William King, P. Lake, T. H. Holland and C. S. Middlemiss. The earliest systematic work done by the Geological Survey of India in Madras was in the Nilgiri Hills and the neighbourhood by H. F. Blanford in 1855 to 1861. The rocks composing the Nilgiri mountains were thought to be a type of hornblendic gneiss to which the name " Mountain gneiss " was given, but which was later called *charnockite* by T. H. Holland (Memoirs, G.S.I., Volume 28, part 2, 1900). This was followed by work in the Salem, Tiruchirappalli, Arcot and Madras districts and at a later date in other districts. The first systematic descriptions of large parts of the country we owe especially to Foote and King. King has described the rocks of the Cuddapah basin, comprising the major part of Rayalaseema, in his well-known Memoir on the " Cuddapah and Kurnool formations of the Madras Presidency " (Memoirs, G.S.I., Volume 8), published in the year 1872. W. T. Blanford worked for a few years between 1840 to 1850 in the Godavari valley and has given descriptions of the Gondwana formations in that area. His work was followed by some boring investigations under the supervision of William King, the records of which form the basis of our knowledge of this possibly potential coalfield. During the last two decades of the last century King, Hayden and Hatch worked on the gold ores of Wynaad which went through a short-lived boom in the eighties. At about the same time petrographic work of a more modern character was done on the rocks of the Salem, Coimbatore, Arcot and Madras districts by T. H. Holland whose major contributions to South Indian Geology are on the iron ores of Salem, the geology of parts of the Salem and on the Charnockite series of rocks. Middlemiss studied certain economic mineral deposits like magnesite, corundum and iron ore in the Salem and Coimbatore districts and also the geology of the Visakhapatnam hill tracts.

The largest volume of contributions to South Indian Geology came from the pen of Robert Bruce Foote whose observations are accurate and whose writings are clear and lucid. King worked partly in collaboration with Bruce Foote and partly independently. In comparison with Bruce Foote's work, it must be said that King's descriptions lack proportion for, sometimes, the latter goes into great detail on certain small areas but leaves out many scores of square miles undescribed. Yet, one must marvel at the large amount of fine work that these pioneers had accomplished in those days when

communications were very poor and conditions of travel must have been difficult indeed. Bruce Foote has left numerous papers on the geology of South India, the most important of which relate to his descriptions of the "Dharwar System" in Southern Bombay, Hyderabad and Mysore (Records, G.S.I., Volume 21, pp. 40–56, 1888; Records, G.S.I., Volume 22, pp. 17–39, 1889). After retirement from the Geological Survey of India, Bruce Foote organized the Mysore Geological Department of which he was the first head. He contributed also in some measure to the building up of a Department of Geology in the Madras University, of which he was a Fellow for many years. He settled down eventually at Yercaud in the Shevaroy hills and he was occasionally consulted by the Government and the public on geological matters till his death in the year 1912.

It was during the last quarter of the last century that foreigners began to exploit the minerals intensively for whatever profits they brought. J. M. Heath, a civil servant in the employ of the East India Company and at one time Commercial Resident (Collector) in Salem, resigned and interested himself in the manufacture of iron from the iron-ores of Kanjamalai in Salem. Factories were erected at Pulampatti on the Cauvery (a few miles from Mettur Dam), at Tiruvannamalai, Porto Novo and Beypur in the earlier part of the century but were all closed down by 1860 or so. There was a big gold boom in Wynaad in the eighties when several companies were floated with an aggregate capital of over four million sterling but practically all of them crashed within a few years owing to bad management. One H. G. Turner, after retirement from service floated a manganese mining company in the Visakhapatnam district and the Salem Magnesite Syndicate, both of which are still productive. Mica mining in the Nellore district was also started in the nineties and one of the early miners, Ansur Subba Naidu, is said to have made fabulous profits from mica mining. The barytes mines of the Ceded Districts, the manganese mines of Sandur, the limestone quarries in a few places, the Cuddapah slab quarries in the Ceded Districts and the ceramic clay workings in a few places comprise all the mining industry that the State of Madras can claim at present.

There is a hiatus in geological work in the Madras Presidency from the beginning of the present century till almost to the beginning of the Second World War. As mentioned above, Middlemiss worked for a few years in the first decade of the present century in the Visakhapatnam hill tracts. Except for occasional investigations in different parts of the Presidency, whether on some mineral deposits or on questions of engineering geology, no systematic work was done until 1938. One such attempt was the mapping of the North Arcot district by Rao Bahadur N. Vinayak Rao, B. B. Gupta and L. A. N. Iyer, which was given up after a couple of seasons.

World War II brought into prominence the importance of minerals for modern industry, for peace or for war. When the war broke out it was decided to strengthen the Geological Survey of India greatly, so as to provide enough personnel for systematic work in all parts of the country. As a result of this decision a party was assigned for work in the Madras Presidency from the season 1939–40, in charge of the present writer. The party was only three strong at the beginning, but it grew rapidly to its present size of about 20 officers within four or five years. This party is stationed at Madras though it has yet to be provided with the necessary laboratory and library facilities for carrying out its work efficiently. At first, the Madras party confined its work to the investigation of certain mineral deposits which were thought to be important as sources of raw materials for war industries. Later, systematic geological mapping was started in several centres, and considerable progress has already been made. The mapping of the Tirunelveli district was accomplished by S. Narayanaswami during the seasons 1943–44 to 1948–49. Work is proceeding in Ramanathapuram, Coimbatore, Salem, Kurnool, North Arcot and in East and West Godavari and an area of 1,000 to 2,000 square miles are being mapped per season. The writer examined and reported on certain limestone, mica, chromite, iron ore, gypsum, asbestos and other deposits; Mr. N. K. N. Aiyengar on the iron ores and magnesite of Salem; Mr. M. S. Venkatram on limestone and barytes; Dr. B. C. Roy on the mica deposits of Nellore; Mr. S. Narayanaswami on the limestones of Tirunelveli and Ramanathapuram; Messrs. A. P. Subramaniam and R. Thiagarajan on ceramic raw materials; Messrs. M. S. Balasundaram and V. Subramanyam on engineering aspects of geology and water-supply.

There, however, remain some important mineral investigations which have to be tackled in a systematic fashion in order to develop their potentialities in full. These are the coal fields of the Godavari valley, the lignite fields of South Arcot, the magnetic iron ores of Salem and Tiruchirappalli and the gold ores of Wynaad. Some work has been done on these but it is high time that we examine them thoroughly in order that we might know their potentialities once for all, and develop them if they are economically worthwhile. The Madras State has good resources in the raw materials for ceramic, glass, refractories and paint industries none of which may be said to be well established within its borders. There are also very large deposits of limestones which can support new cement plants as well as provide some material suitable for chemical purposes. There are many excellent building stones such as the gneisses and granites of Bellary, Arcot, Salem, Tiruchirappalli, Madras and Tirunelveli; the Charnockites of Madras, Chingleput, Salem, Nilgiris, etc., the limestones and marbles of the Cuddapah basin, Visakhapatnam, Salem, Coimbatore; flagstones well known under the name *Cuddapah slabs* worked

in Cuddapah, Kurnool and Guntur districts; also a few other types of stones which can be used for both building and decorative purposes. There is at present no building stone industry worth the name in the State, but since many of these stones are of excellent quality, their modern quarrying and preparation can contribute to the establishment of a prosperous new industry.

The people of India do not yet realize the importance of minerals to the prosperity of the country. Some mineral deposits are worked, no doubt, but very little processing is done. High grade minerals of strategic value are exported out of the country for a negligible profit. It is hoped that henceforth serious attention will be paid to the orderly development of mineral deposits and to the establishment of industries based on them.

A Short Note on the Abors

By Dr. B. S. GUHA

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THE ABORS COMPRISE a group of tribes who occupy the mountainous region, separating Assam from Tibet in the north-east frontiers of India. The territorial groups of the Abors are, Padams, Pasi, Minyongs, Pangis, Simongs living in the region bounded by the Subansiri river on the west, and the Sisseri and the Dibang on the east and the high Himalayan ranges on the north.

The Abors are a Mongoloid people with marked epicanthic fold and prominent cheek bones, round face and moderately broad flat noses; their stature varies from short to medium, with brown skin, and black straight hair. Like all Mongoloid races, they have scanty hair on the face and body. They are a sturdy race capable of great exertion and have well-developed muscles.

The usual dress of the Abors consists of a loin-cloth hung from the cane waist belt 'Uk' (ABOR-24) and a coarsely-woven sleeveless coat. During the rains, the males use a cane plaited rain-cover the outer side of which is decorated with the black fibre of the sago palm tree. A big pouch on the inner side allows the rain coat to be used as a waterproof haversack. As head-dress the males use cane helmet 'Dumlup' (ABOR-36), as a protection against the sun and the rain. While going on a journey, an Abor is always seen carrying a side bag 'Situm nyogon' (ABOR-22) made of bear skin to carry his daily necessities and a 'dao' and a spear.

The dress of the Abor women consists of skirts called 'gale' and a jacket which are made by them on their looms. The skirt is generally coloured and decorated with geometrical designs.

The unmarried girls wear a few brass discs tied together round the loins. These discs are called 'Beyop' (ABOR-10). They are made by local blacksmiths and cast in a mould. They vary in size, the largest being 3½" in diameter. After the birth of the first child, the woman wears only a tight skirt round her hips. The skirt is held in position by a plaited cane belt 'Uk'. They also wear a waist band 'Sumbi', studded with brass bosses.

As ornaments, both sexes wear necklaces of blue and green porcelain beads imported from Tibet or strings of beads purchased from the plains. They also *wear brass bracelets 'Kabing' (ABOR-33), 'Lerum' (ABOR-8) of various* designs. The small girls wear bracelets made of plaited bamboo strips (ABOR-27). The practice of tattooing girls especially among the Minyongs, Pangis and groups living farther north, is prevalent.

The Abors live in permanent villages, the site of which is chosen on a *mountain spur chiefly for defence purpose.* Water is sometimes brought into the village by means of a long bamboo pipe from the nearest spring.

The houses are constructed on piles rectangular in shape and are usually 35′ × 25′ in size. The roof comes low down almost to the ground to protect the walls from wind and rain. Cane and wild banana leaves are commonly used as thatching materials. An open platform projects from the front verandah that leads into the house. There are two entrances, one at the front and one at the back that are reached by notched logs serving as ladders. The house has only one room and household belongings are hung on the walls or kept in the ceilings. *The floor is made from split bamboos* and the fire *place* which is situated in the centre is made of earth and stones. The granaries which are built like miniature platform houses, are usually at a little distance from the dwelling-houses intended for protection against fire. Besides, there are dormitories for the bachelors *called 'Mossup'. In the interior and higher regions,* there are separate dormitories for spinsters called 'Rashengs'. The walls of the 'Mossup' are adorned with the trophies of hunted animals.

The household implements of the Abors are not very numerous. Bamboo plays a *dominant role in their daily life.* Bamboo tubes for holding water or rice beer, bamboo baskets, gourd vessels, wooden trays are the essential utensils. Hand made earthen cooking pots are also manufactured by some groups of Abors.

The *hills abound in game, and hunting* is therefore a favourite occupation of hillmen. A simple bamboo bow, arrows, and the usual Abor 'dao' form the main hunting weapons. Some of the arrows are tipped with iron heads and are poisoned. The arrows are carried in a bamboo quiver 'Gadbung' (ABOR-21) provided with *a lid and fitted with a cane pocket to keep spare bow strings.*

The Abors were in the recent past a very war-like tribe. Their main weapons, besides bows and poisoned arrows, were spears and long Tibetan swords. They also carried cane or *mithan hide shields. To protect their* heads they wore strong cane helmets 'Dumlup lubro' (ABOR-34). This hat is made of very closely plaited cane and is strengthened by specially strong canes radiating from the apex which serve to ward off the sword thrusts.

They are often decorated with bear skin, hornbill and boar's tusk to frighten the enemy.

The Abors are an agricultural people. They raise their crops by 'Jhuming' whereby forests are cut, fired and cultivated for two or three successive seasons before it is allowed to lie fallow for a cycle of years varying from 9 to 12 years. Each village forms the largest agricultural unit having its own 'Jhuming' land within its territorial boundaries. The main cereals cultivated are paddy, 'Anyat' (*Coix lachryma*) and 'Mirung' (*Eleusine Coracana*). Apong, the national drink of the Abors, is brewed from rice, 'Mirung' and 'Anyat'. The sowing is done with the help of a digging stick or a pointed iron implement and the weeding is done by a horse-shoe shaped bamboo scraper 'Ik' (ABOR-31). Harvesting is done by hand. The grains stripped from the stalks by hand are placed straight into a large conical basket. They are then thrashed and winnowed in the field before being brought to the village to be stored in the granaries. Of the domestic animals mithans and pigs form the chief source of wealth of the people.

The Abors are divided into various territorial endogamous groups. Each group is further divided into a number of exogamous clans. Though monogamy is the general rule, a rich man may have more than one wife.

Each village is administered by a headman 'Gam' who is always assisted by the village council 'Kebang' in settling disputes.

The office of the headman is not hereditary. Any wise and experienced man may be elected for the post by the 'Kebang'.

Like most primitive tribes the Abors believe in a host of benevolent and malevolent spirits They attribute all sickness as the work of hostile spirits, and have to offer sacrifices to propitiate them. They put a metallic disc 'Emul' (ABOR-26) round the neck of the sick person to act as charm against the evil spirit.

In case of death, the Abors bury the dead body in the village graveyard and erect a small hut in which the personal belongings of the deceased are kept. Food and drink offerings are also given daily before the grave for the recently dead persons.

Art in Madras Museum

By Dr. JAMES H. COUSINS

IN THE DEVELOPMENT of the use of words to express the growing awareness by the mind of the niceties that divide one phase of life from another, curious contradictions have arisen. Two such are found in the title of this article. In the general mind "Art" refers to pictures, and "Museum" to what used to be called the plastic arts before manufacture took over the word "plastic" and gave it the connotation of waist belts and wrist bands; and the mention of art in connexion with a museum may suggest a pictorial department tacked on to it, and not completely comfortable in the association.

The term "museum" is itself, strictly speaking, a misnomer. It is derived from the Grecian Muses, the celestial patrons of certain of the arts—poetry in four phases, drama in two phases, history, dance and astronomy, nine in all. Of these, two belong to the domain of knowledge; the remainder (poetry, drama, and dance) are describable as arts in the inclusive sense of the term. But the major arts of architecture, stone sculpture, wood-carving, metal-casting, and painting, have had to get along without celestial patronage; so also has music, notwithstanding its relationship with the Muses by name.

Almost a century prior to the organization of the Museum, the tension of the fighting times between the English and French powers (this was in the hey-day of Clive, around 1760) was relieved by the founding of a place in which dramas could be performed and dancing enjoyed. This was known as The Pantheon, and may be regarded as the ancestor (not as the immediate parent) of the Museum. Play-bills, if there were any, have not survived the white-ant and silverfish insect; but the circumstances of the time indicate that the plays were not Indian in subject or language, and that dancing took the forms that preceded the German waltz for couples and the Polish mazurka for groups. Bharata natya or Kathakali would not have been included.

Another century was to pass before the Madras Museum began its official career. This was in 1851, a year that in retrospect assumes historical dimensions. The factual aspect of that year, whose centenary as regards the Madras Museum this book records, is dealt with herein by others. My concern, as per title, is with the relationship of the Museum and Art; and an unexpected and notable start is made by a "Notice" in the "*Fort St. George Gazette*" of 1851, which Dr. Aiyappan, in his search for contemporaneous information about the beginnings of the Museum, has come upon. The Notice is dated 6th February 1851, and runs:

Copies of paintings of the Caves of Adjunta by Captain Gill, will be exhibited at the College Hall for the inspection of the public from 6 a.m. to 6 p.m. daily to the 12th instant.

Except for those versed in the history of the discovery of Ajanta (Adjunta) and its frescoes and their disclosure of the superb qualities of the wall paintings of the Buddhist era, from the first century B.C. to the eighth century after Christ, the mention of the frescoes probably brings up Calcutta in the first decade of the present century, when the Indian Society of Oriental Art was founded; or perhaps recalls the transfer in 1906 of Mr. E. B. Havell, an English art-master, from the Madras School of Arts to the Calcutta School, when the frescoes were rediscovered as models and inspirations for Indian art-students. Yet, half a century earlier, the public of Madras could look on copies of the immortal paintings for six days from dawn to sunset. The "College Hall" in which the frescoes were exhibited was the immediate parent of the Museum Theatre, which is the rostrum and stage of the Government Museum. Art in the Theatre is the same thing as Art in the Museum; and Madras may well be proud of the fact that it enjoyed the then unknown and now world-renowned paintings half a century before the Bengal revival of indigenous art.

The "College Hall" exhibition of 1851 is all the more remarkable in the interest it implies in Indian art by leaders of the paramount power, seeing that a search for artists in Madras in the memorable year that we today are celebrating a century later can only discover three architects and sculptors, one being called Charles de Rozario, a painter called Fonseca Simon, and two Gujerati importers of porcelain from China.

The year 1851 has a still further claim to remembrance in the centenary celebration from the point of view of the arts. An exhibition of arts and crafts in London that year encouraged the recognition, collection and transmission from India of art-objects created in the country The Secretary of the Madras Committee for the London exhibition, Surgeon Edward Balfour, was the first Officer-in-charge of the Madras Museum, and merits a garland for his service in making the arts of India known at the centre of what was then called the British Empire.

The *Madras Museum began in 1851 around a collection of geological* specimens for the purely utilitarian purpose of encouraging the development of work in stones and minerals. But there were other pieces of sculptured stone lying about on the ground which the Museum was to occupy. Nature might enjoy herself in her volcanic way shaping crystals of quartzite and anticipating colour schemes in the variegations of purple and white in porphyry; but it takes the imagination and skill of the craftsman to put "*sermons in stones*," *to make the dumb vocal, to impart the impression* of movement to the immobile, to reveal human personality and symbolize super-human qualities and characteristics, which are immaterial, in solid matter.

Before long the historical and artistic possibilities of an institution that had within its reach an immense and unexplored amount of derelict architecture and sculpture were realized by those in power, and also by the religious bodies out of whose doctrines and observances ancient buildings, and sculptures in relief and in the round, had grown and served their turn in the evolution of humanity and fallen into the post-mortem category of archaeology. One can only speculate as to what might have happened had the Madras Museum not been in existence when, in 1854, the elaborately insculped ruins of the great Buddhist centre at Amaravati, in the Andhra desa, were re-discovered. But the Museum had been working and justifying itself for three years, and at the Government's request took up the task of preserving what remained of the ruins of Amaravati for the historical information and the artistic edification of the future. We are part of that future, and benefit by the wisdom and work of those who collected and arranged the most impressive exhibit of the Amaravati sculptures now in the Museum. Our thanks to them is mingled with wonder at the marvellous achievement of the sculptors' art so long ago (Amaravati is dated 2nd century B.C. to 2nd century A.D.), with a touch of envy at their devotion, idealism and skill that seem also to be things of the past, at any rate on the same scale and with the same apparent high patronage.

The work of major art in Madras Museum—the Amaravati sculptures—was preceded and followed by the acquisition of examples of Indian craftsmanship including pottery. But years of slow addition were to pass before the next notable item was added to the growing wealth of the Museum. As a means of encouraging the collecting of disused works of art, and their preservation from destruction and indiscriminate dispersal, a Treasure Trove Act, covering all India, was passed in 1878. The effect of this was to bring to light a large number of bronze images that, through the development of defects, had fallen out of use as objects of worship in Hindu temples, also images not used in worship but that served as reminders of the higher life. The result

of this was the addition to the Museum of the bronze images of Nataraja, an aspect of Shiva as the Chief Dancer, which are now famous throughout the world of art. No forerunners of these fascinating representations in immovable metal of rhythm and vitality have been found. Dr. A. K. Coomaraswamy inferred from this that they were original embodiments of the theological ideas of the ninth or tenth century in South India, where the Shaivite view of the universe prevailed. The symbolical expression of the *talam* (rhythm) and the *agni* (fire) in the drum in one of the hands of the image and the flame in the other—nowadays referred to as " wave lengths " and " radio activity " —are brought together in the dance posture, which is less a static posture than a rhythmical expression perpetually moving from one phase to another in the cosmic "continuance" that Dr. Coomaraswamy calls "a magnificent conception of the Absolute in action," so idealistic and at the same time so realistic that it is a perpetual delight to the eye and to the imagination.

This note on art in Madras Museum during the first century of its existence would be incomplete without a reference to the art of painting. In 1889, Dr. Edgar Thurston, then Superintendent of the Museum, purchased paintings by Raja Ravi Varma of Travancore and Sri M. V. Dhurandar of Bombay, both of whom had attained eminence in the western style. Though the frescoes of Ajanta had become known to persons interested in painting, they had not yet become an influence among artists. Art criticism, which usually accompanies art creation, had not yet come into existence, though it had high precursors in ancient philosophy and in poetry like that of Kalidas. The " Bengal revival " was 13 years in the future. Art, in the pictorial use of the term, was confined in South India to a gifted princely family in Travancore. Ravi Varma, its chief claimant to fame, was born in 1848, and in 1873, when he was 25, won the Governor's medal in the Madras Fine Art Exhibition. He also won a prize in Vienna. Reproductions of his paintings of Gods and Goddesses were spread over India and became a religious cult. His title to remembrance is his faithfulness to the Hindu Puranas and the classical literature of India in the time of their obscuration. In the 62 years between 1889 and 1951, a remarkable change took place in the practice and appreciation of painting in India. The influence of the Bengal revival made itself felt in many centres over the country. Eminent individual artists arose. Schools were founded. Exhibitions became frequent. In the latter the Museum took a notable share; but additions of works by the new artists to the permanent collection were rare. One aspect of the revival and the Museum's recognition of it brings 1851 and 1951 together, and appropriately closes this note. At the beginning of its career, the Museum, deputized in advance, so to speak, by the precursor of the Museum Theatre, exhibited the first copies of the Ajanta frescoes seen in South India. At the end of its first century

"Sakuntala" by Raja Ravi Varma (oils)

the Museum gave the public the opportunity, a small one but indicative, of seeing copies of the wall paintings of the Lepakshi temple near Anantapur, and a rare but striking copy of a mural in the Panamalai temple, South Arcot district, the oldest known wall painting in South India, attributed to the 8th century. So wide-spread and vigorous is the practice of painting in India today that it is to be hoped that there will shortly be established in Madras a National Art Gallery for the preservation of a choice selection of the best works by Indian painters.

APPENDIX I

Government appreciation of the international recognition of the skill of the Museum Taxidermist, Mr. Anthony Pillay

GOVERNMENT OF MADRAS

Public Department

Museum

14th November 1877

Read the following paper :

No. 78. From Surgeon-Major B. Bidie, M.B., Superintendent of the Government Central Museum, to the Chief Secretary to Government, dated Madras, 13th November 1877, No. 323.

I have the honour to report to His Grace the Governor in Council that the Committee of the Maritime and Piscatorial Exhibition, held this year at the Royal Aquarium, London, have awarded a handsome silver medal to P. Anthony Pillay, the Head Taxidermist of this Museum, " for Taxidermy ".

2. No exhibits were forwarded from the Museum, but it appears that His Royal Highness the Prince of Wales sent for inspection, but not for competition, his collection of Madras Fish prepared at the Museum, and that the medal was awarded to Anthony for the art shown in the preparation of the specimens.

3. This is not the first time that Anthony's skill in stuffing fish has gained the commendation of competent judges, as in 1867, Dr. Gunther, of the British Museum in a paper read before the Zoological Society said " The finest specimens of stuffed fishes which I have seen are prepared by the native employees of the Madras Museum ".

4. The medal, which has just been received was forwarded through the kind agency of retired Surgeon-Major F. Day, and I have deemed it desirable to bring this testimony to Anthony's value as a public servant to the notice of His Grace in Council.

No. 79. Order thereon, 14th November 1877.

The Governor in Council learns with satisfaction of the award of a handsome silver medal by the Committee of Maritime and Piscatorial Exhibition of the Royal Aquarium, London, to P. Anthony Pillay, the Head Taxidermist of the Government Central Museum at Madras for Taxidermy.

(True extract)

(Signed) — — —,
Chief Secretary to Government.

APPENDIX II

Statistics of visitors to the Government Museum, Madras.

Year.		Number of visitors.	Year.		Number of visitors.	Year.		Number of visitors.
1851	..	530	1887	..	233,028	1923	..	373,424
1852	..	2,906	1888	..	264,182	1924	..	409,592
1853	..	20,096	1889	..	337,801	1925	..	416,891
1854	..	40,316	1890	..	378.234	1926	..	454,981
1855	..	201,987	1891	..	364,542	1927	..	480,327
1856	..	542,866	1892	..	361,452	1928	..	420,363
1857	..	380,102	1893	..	341,238	1929	..	365,859
1858	..	386,600	1894	..	311.112	1930	..	412,103
1859	..	440,061	1895	..	368.282	1931	..	404,938
1860	..	552,407	1896	..	385,373	1932	..	426,267
1861	..	527,753	1897	..	306,548	1933	..	543,464
1862	..	364,889	1898	..	262,023	1934	..	477,456
1863	..	261,877	1899	..	333,895	1935	..	522,707
1864	..	235,913	1900	..	415,558	1936	..	560,253
1865	..	81,001	1901	..	417,990	1937	..	574,397
1866	..	78.067	1902	..	410,436	1938	..	411,354
1867	..	100,943	1903	..	375,726	1939	..	387,516
1868	..	109,340	1904	..	413,663	1940	..	321,772
1869	..	102,569	1905	..	397,058	1941	..	277,352
1870	..	128,696	1906	..	390.190	1942	..	235,288
1871	..	110,177	1907	..	334,493	1943	..	46,634
1872	..	116,691	1908	..	579,770	1944	..	99,416
1873	..	112,360	1909	..	529,663	1945	..	137,071
1874	..	145,663	1910	..	413,726	1946	..	274,140
1875	..	177,340	1911	..	444,837	1947	..	393,151
1876	..	210,926	1912	..	326,968	1948	..	550,348
1877	..	206,887	1913	..	426,809	1949	..	617,556
1878	..	180,958	1914	..	448,489	1950	..	720,291
1879	..	176,452	1915	..	347,233	1951	..	601,452
1880	..	198,423	1916	..	410,080			
1881	..	173,898	1917	..	392,627	Total	..	32,904,277
1882	..	211,246	1918	..	318,289			
1883	..	271,881	1919	..	270,748			
1884	..	242,514	1920	..	382,901			
1885	..	272,968	1921	..	303,024			
1886	..	311,462	1922	..	310,931	Average for the last ten years.		367,568.

Fig. I--The first Palaeolithic tool discovered in India (Foote Collection, Madras Museum)

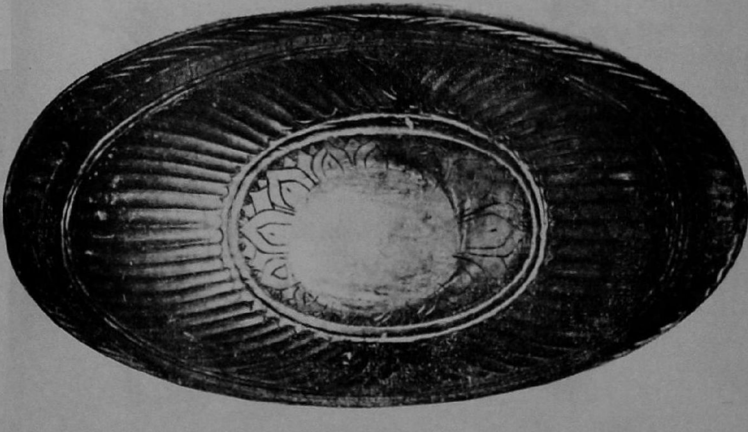


Fig. 2—Bronze bowl from the Nilgiris (Breek's Collection, Madras Museum)

Plate II

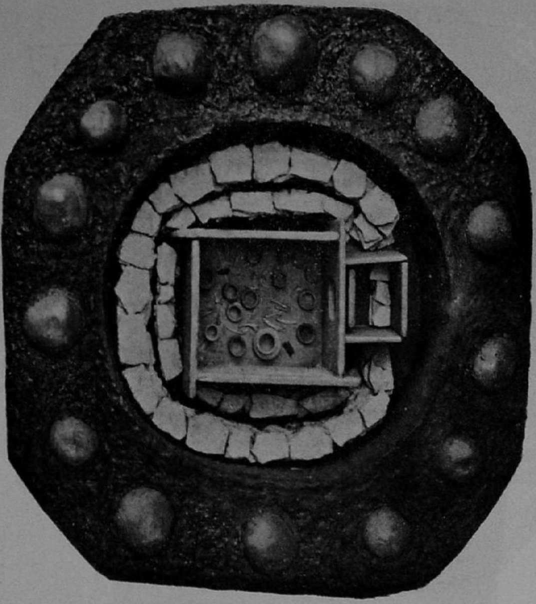


Fig. 1—Model of Megalithic Cist, Brahmagiri, Mysore

Fig. 2—Pottery Sarcophagus, Sankavaram

Fig. 1—Wooden Sorcery Figure

Fig. 2—Five-faced metal drum—a rare specimen

Fig. 3—Gold coin—Kulottunga Chola

Fig. 4—Punch-marked Silver coin—Pandyan

Fig. 5—Gold coin—Raja Raja Chalukya

Plate IV

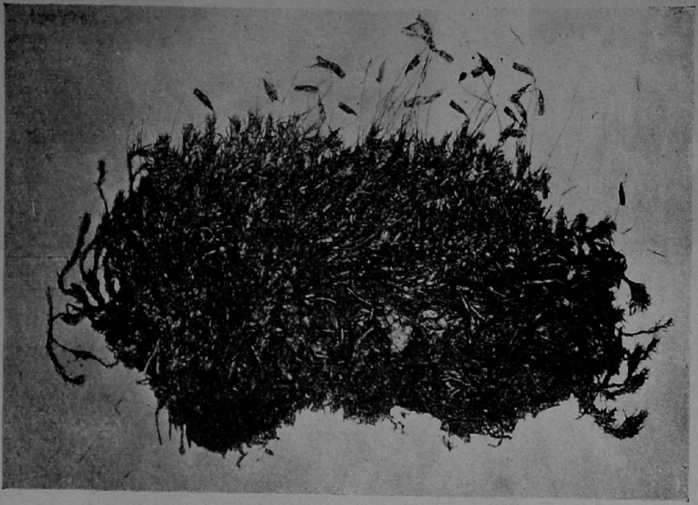


Fig. 1—Moss on lea--mould

Fig. 2—Palakollu Curtain

Fig. 1—Buddha, Amaravati.
(3rd Century A.D.)

Fig. 2—Lokesvara, Nagapattinam. (9th Century A.D.)

Fig. 3—Natesa, Poruppumettupatti. (10th Century A.D.)

Plate VI

Fig. 1—Frieze, Amaravati Stupa. (2nd Century A.D.)

Fig. 2—Punyasala, Jaggayyapeta Stupa. (2nd Century B.C.)

Plate VII

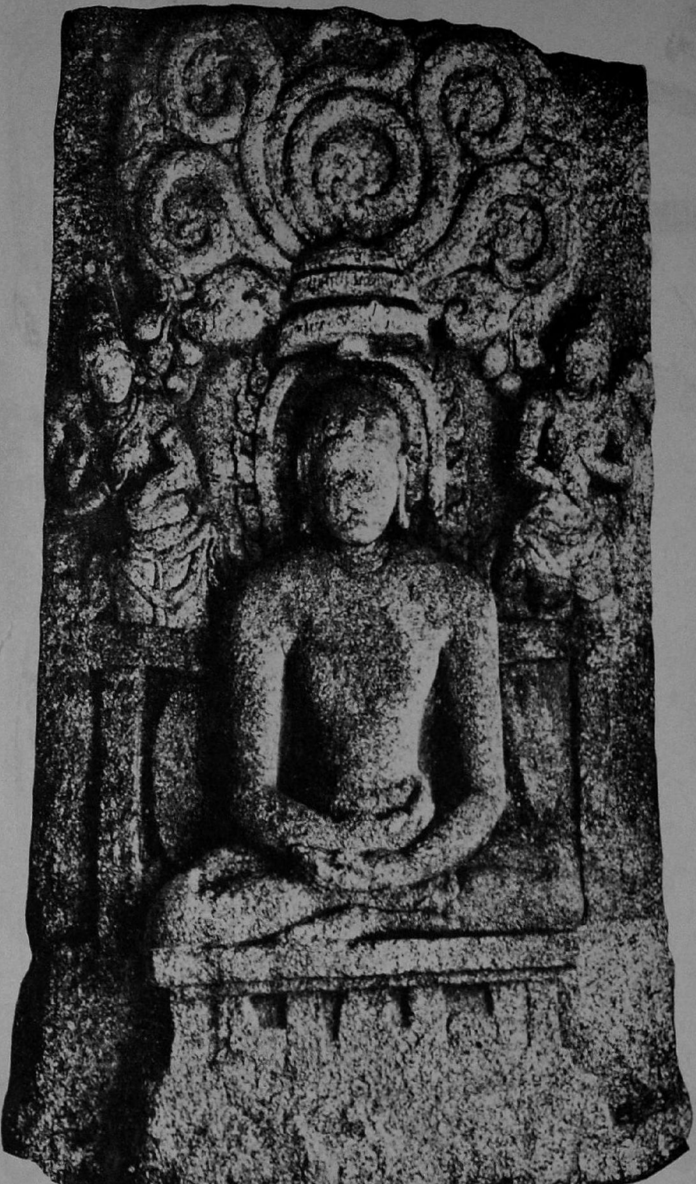
Mother-Goddesses, Satyamangalam. (8th Century A.D.)

Plate VIII

Fig. 1—Shanmukha, Kancheepuram. (11th Century A.D.)

Fig. 2—Agni, Tirunelveli District. (12th Century A D.)

Plate IX



Mahavira, Deviagaram. (8th Century A.D.)

Plate X

ncheepur... A.D.)

Fig. 2—Vinadhara Daks... Hemavati. (10th Century A.D.)

Fig. 3—Copper charter of Rajendra Chola, Tiruvelangadu. (11th Century A.D.)

Plate XI

Fig. 1—Somaskanda—A masterpiece in bronze

A [illegible] unique group

Rama with Sita[illegible]nana—A b[illegible]ze group